ONE SHILLING

The MODEL RAILWAY NEWS

VOL. 28 No. 335 NOVEMBER 1952

A PERCIVAL MARSHALL PUBLICATION

TRUE MODEL co

SOME NEW ITEMS

'T.T.' C.C.W. 1/3 Corridor Brake Kit, **6/6.**
,, L.M.S. Parcels and Luggage Van Kit, **4/7**
New detailed Rokal Bogie, **2/6** each.

'OO' GRAHAM FARISH
Flat Truck, **4/-;** Plank Wagon, **4/3 ;** Bolster Wagon, **4/6 ;** Composite Pullman, **32/6 ;** B.R. and S.R. Coaches, 1st-1/3-3rd, **25/-** each
Ditto Brake Compo **27/6**
New York Central 4/6/2 loco and 12-wheel tender 12 v. d.c. 2-rail new collector system **£9 5s. 0d.**
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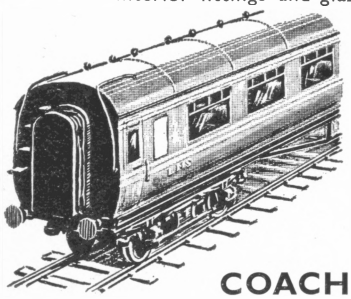
SIMPLE and CERTAIN
KIT MAKES *ACCURATE SCALE* L.M.S. 57 ft. COACH
With interior fittings and glazed windows



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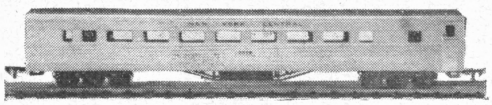

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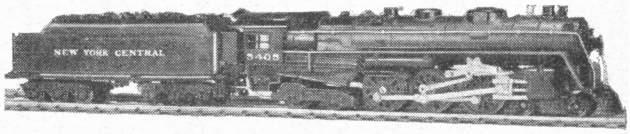

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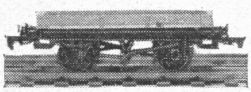

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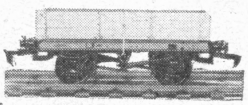
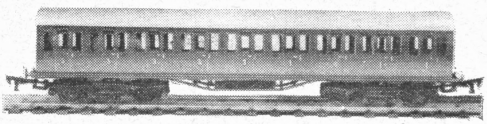


THREE PLANK WAGON .. 4/3



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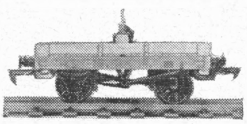
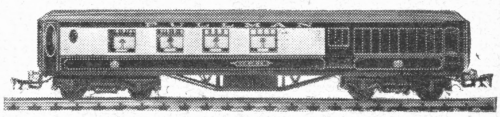


BOLSTER TRUCK .. 4/6



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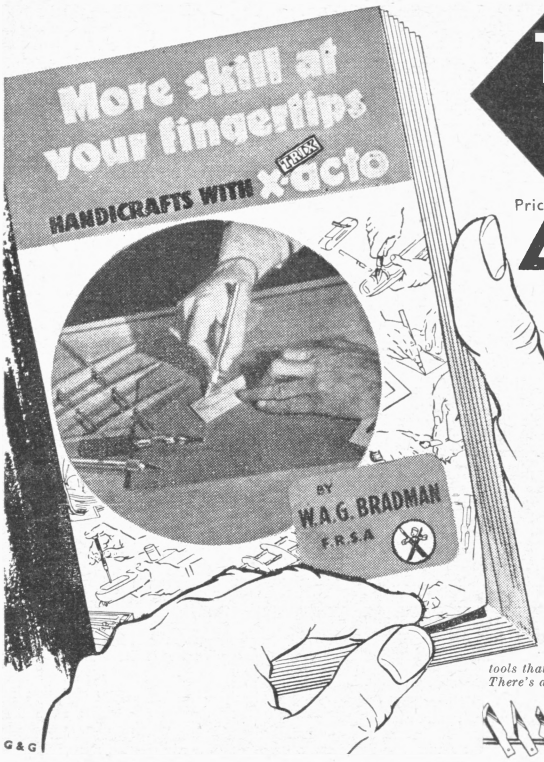

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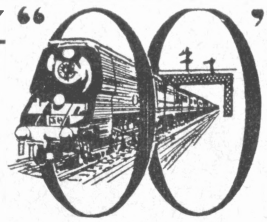

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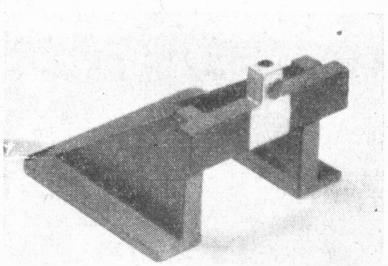

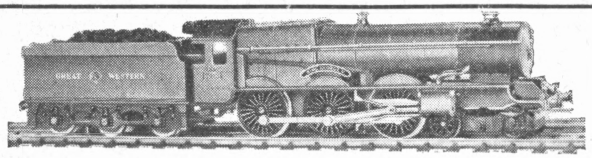

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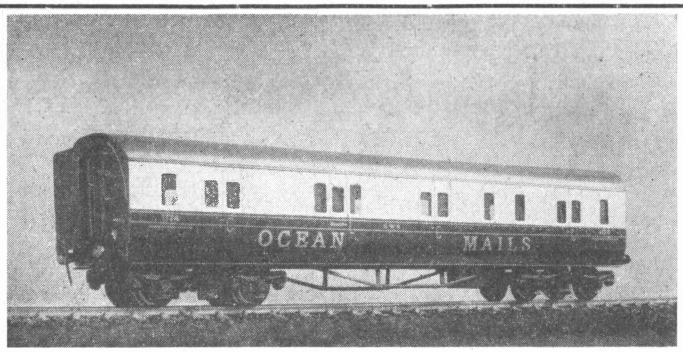

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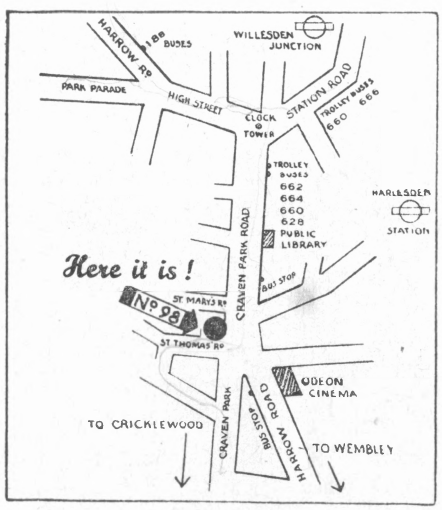

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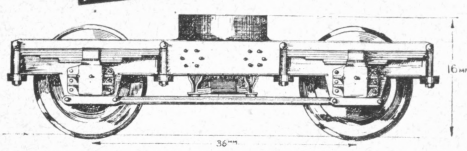
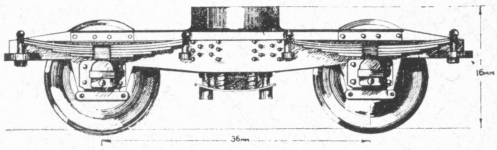


R/253 L.M.S. Standard Coach Bogies, **7/9½** per pair.
R/254 Ditto fitted Hornby-Dublo wheels, **7/9½** per pair.

ACRO BOGIES
7/9½



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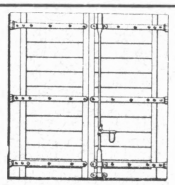
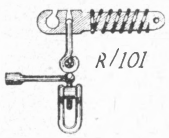


R/236 Cast Van Doors, **1/4½** pair



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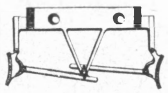

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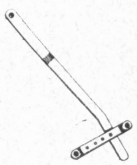

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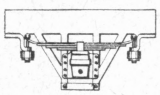
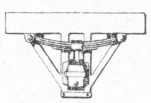
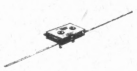


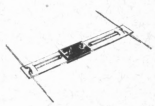
R/131 Van Axleguards, **2/0½** set of 4.



R/130 Wagon Axleguards, **1/10** set of 4.



R/118 2-rail Collectors, **1/10** each.



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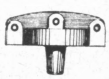

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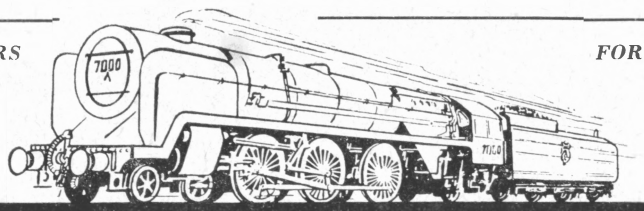

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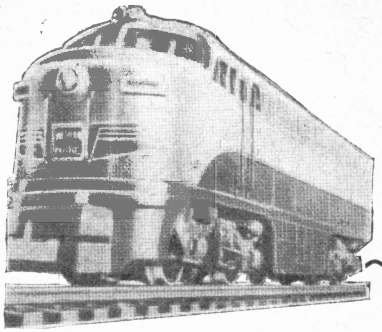

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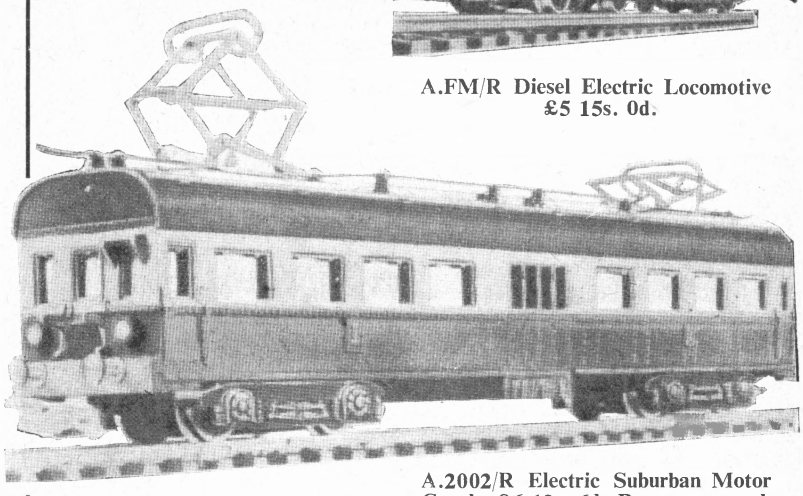
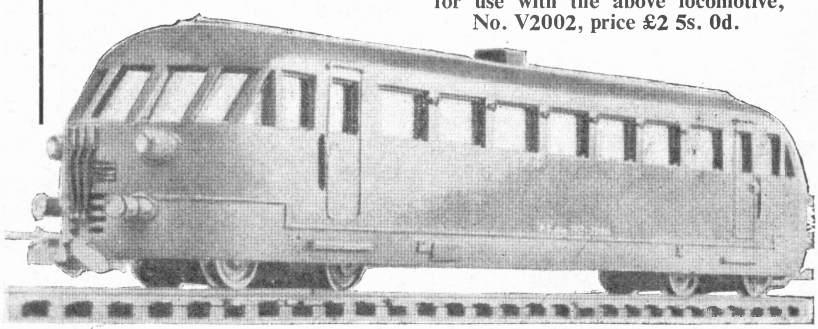


A.2002/R Electric Suburban Motor Coach, £6 12s. 6d. Passenger coach for use with the above locomotive, No. V2002, price £2 5s. 0d.



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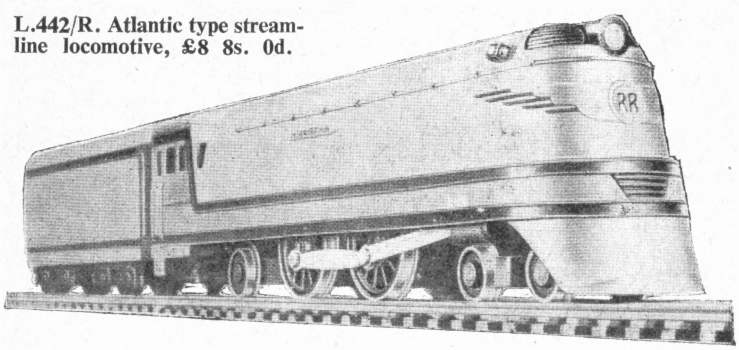

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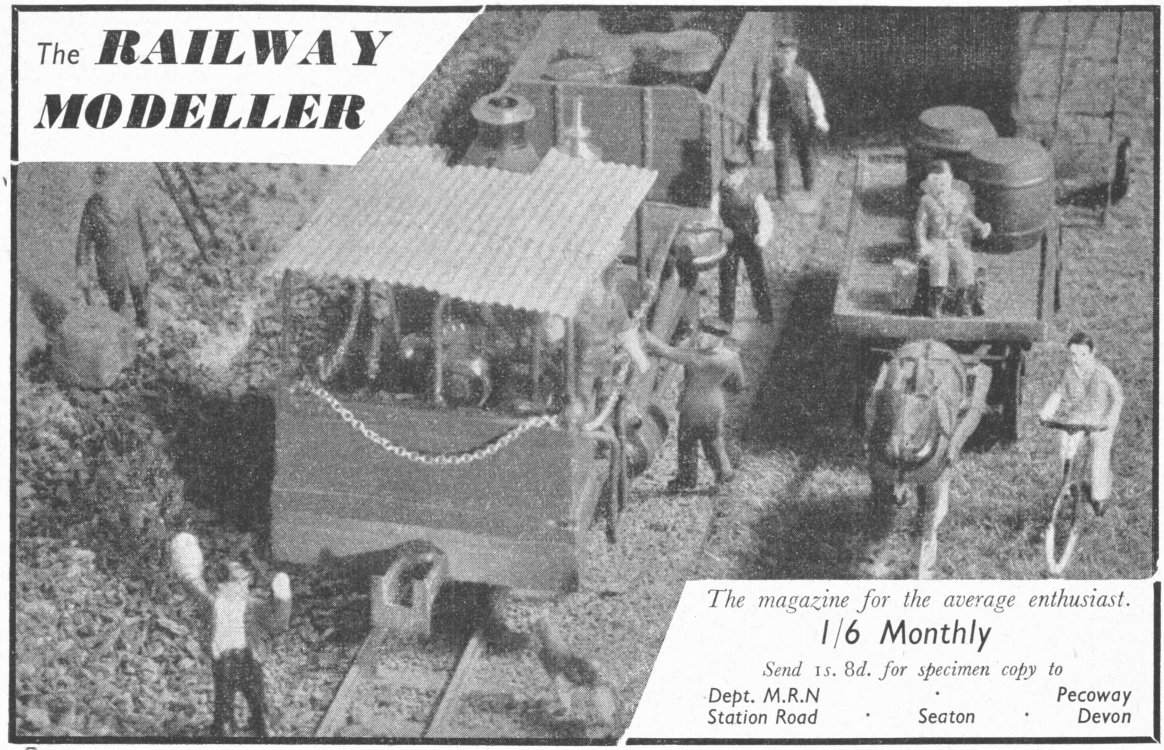

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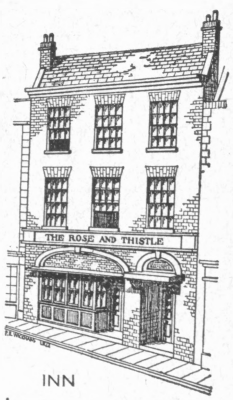

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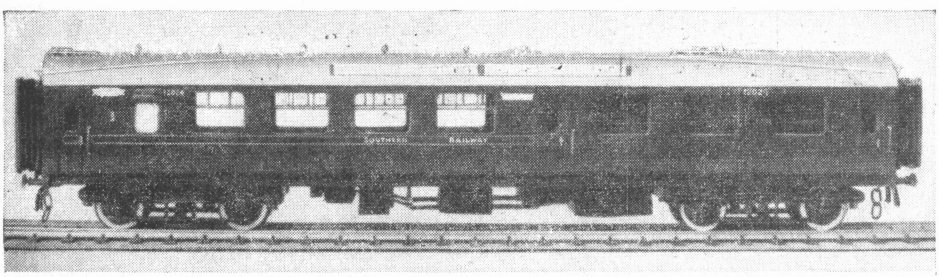

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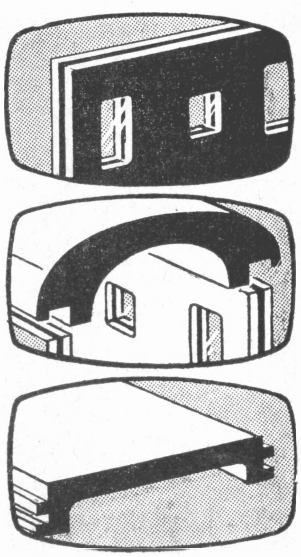

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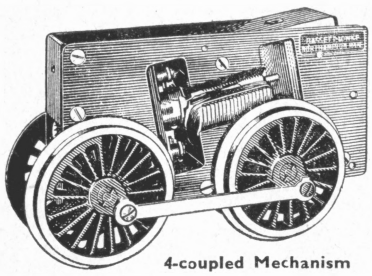

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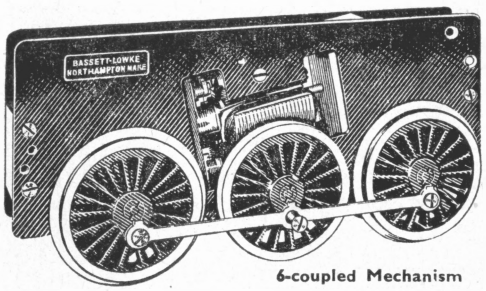

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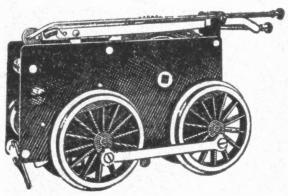

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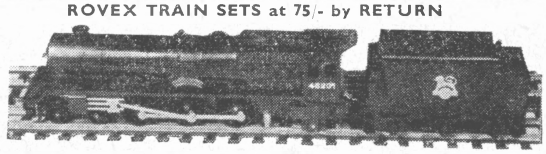

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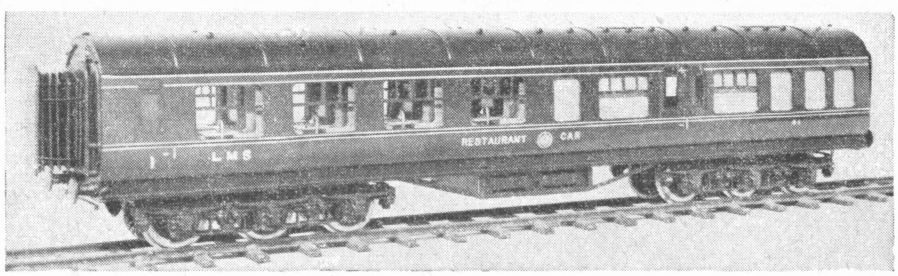

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The MODEL RAILWAY NEWS

Vol. 28 No. 335 November, 1952

Editorial Offices :
23, Great Queen Street, London, W.C.2.

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Notes of the Month

WE have received a copy of a book dealing with the products of Hungarian railway engineering and published by the Nikex Hungarian Trading Company, Budapest. There are 31 sheets, size 8½ in. by 12 in., and four folded diagrams contained in a handsome, stiff cover.

The contents consist of fully-illustrated descriptions of diesel-engined railcars and railcar trains built in Hungary for service in various countries in Europe and abroad. Tables giving the principal dimensions of several of the cars are included, while the four folded diagrams show side and end elevations, cross-section and plan of two of the principal motor-cars and two complete trains.

Of prime interest is the advanced style of the internal fittings and furnishing of the cars, especially in those which are intended for long-distance journeys on such lines as the Argentine State Railways. Some of the trains have obviously been designed to meet conditions of daytime railway travel that are unlike those which we usually associate with railcars, and the standard of comfort and convenience seems to be very high indeed.

We understand that interested readers who would like to have copies should apply direct to the Nikex Hungarian Trading Company, P.O.B. 271, Budapest 62.

British Railways Freight Handling

The latest types of British Railways freight wagons, and many freight handling devices were featured in demonstrations staged at Battersea Wharf Goods Depot, London, in September.

The intention of British Railways is to replace entirely the 480 wagon types which were in production at nationalisation, by not more than about 150 types, thus obtaining great economies in design and production. Sixty-five types of British Railways standard freight wagons have already been produced and 20 of these were on show at the Battersea Exhibition.

Three new types of wagons were publicly shown for the first time, two of them coal-carrying wagons with capacities of 24½ tons (instead of the normal 13-16 tons), which will be the standard of the years to come. One of the coal wagons is hoppered for discharge between the rails and the other has four side doors and an end door. Both are 21 ft. 6 in. over headstocks, and have a 12-ft. wheelbase. The third example is a high capacity iron ore tippler wagon, which carries 27 tons and is similar in design to the standard 16-ton mineral wagon except that, as no doors are necessary, the flush interior has been possible. The introduction of these higher capacity wagons is justified by the trend of development by coal, gas and electricity undertakings and the iron and steel industry. Nevertheless, the size of wagons for general merchandise continues to be governed by the dimensions of trade and for this reason the existing capacities of 12 tons for covered vans and 13 tons for open wagons are being retained as the average wagon load in Britain is under 4 tons.

Mr. C. H. Cole

We learn, with deep regret, that Mr. C. H. Cole passed away suddenly on September 29th. We had known him personally for many years, and we always admired his desire for accuracy in model railway detail. He was a pioneer of the "built-up," or "plate," type of die for producing really good and accurate die-castings, and the hobby is indebted to his ingenuity and enthusiasm for producing the well-known range of "Cole" white-metal details such as axleboxes, axle-guards, laminated springs and the like.

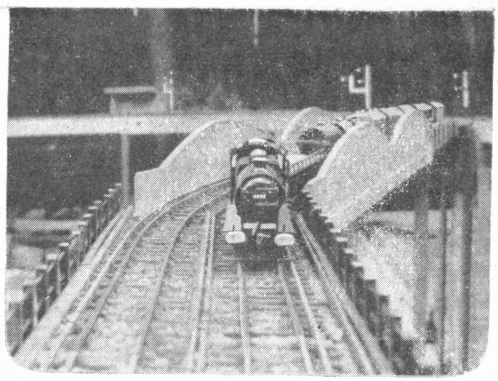
We believe that Mr. Cole was one of the original members of the Model Railway Club, and by his passing, a familiar figure is removed from its ranks. He was a first-class craftsman and built some excellent locomotive models of which, perhaps, the best known is a "OO"-gauge L.N.E.R. "A3" class Pacific.

Our Cover Picture

Mr. D. A. Williams, owner of the 2-rail Metropolitan Junction Railway, supplied this month's photograph. The locomotive, S.R. Class "T9" No. 314, is waiting at the up homes of Metropolitan Junction, prior to backing on to a down train in the station. The wagons are Trackmasters, modified to run on E.M. gauge, loaded and dirtied.

A 7 M.M. SCALE
L.M.S. GARDEN LAYOUT

by T. J. BUFFEY



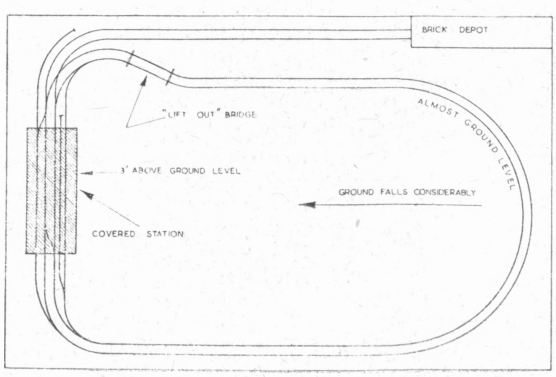
THE first thoughts in submitting these notes were to show that might be called " A Winter's Work." The L.M.S. 4-6-0 Class " 5," milk van, two vestibuled luggage vans and the 20-ton brake van were all constructed during the winter months, when running on my outdoor layout was more or less suspended, as I suppose is inevitable during winter with most outdoor layouts. The " second thoughts " were to describe the layout and construction of same.

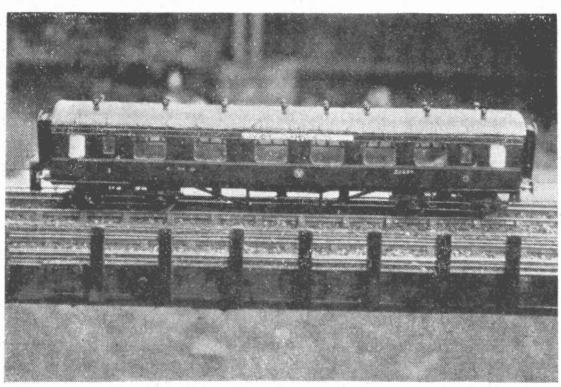
The locomotive was decided on as being something different from the usual 4-6-0 with Walschaerts gear. The urge to build it was the result of an illustration in *The Railway Magazine* of May/June, 1948, page 164. There were no drawings available and dimensions were worked out from those given on that page. Cylinders were pitched slightly higher in order to allow the use of correct diameter bogie wheels. With the exception of the taper boiler, the rest of the construction was reasonably simple. A Bassett-Lowke mechanism is fitted and the running and pulling is really good.

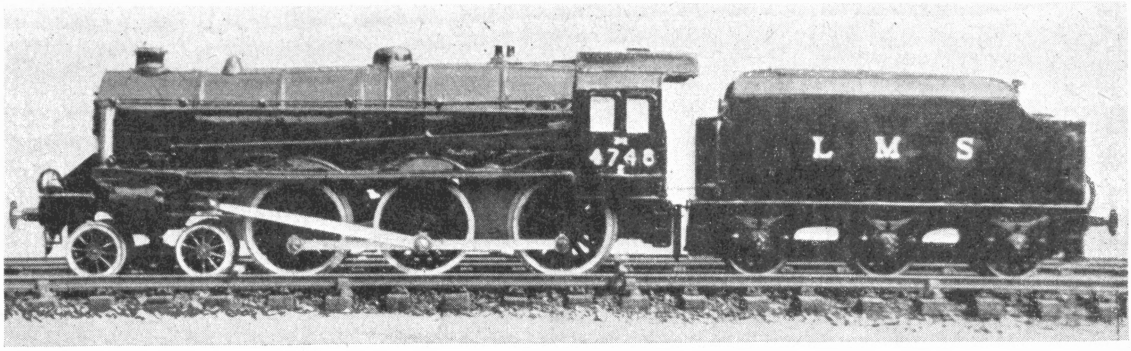
The remaining stock mentioned above was interesting to make, especially the 20-ton brake and insulated milk van. The luggage vans are made out of Perspex (as are all my coaches) on a mould which gives two sides and roof all in one—not a difficult procedure providing one is quick after getting the Perspex pliable enough to force the coach-shaped jig into the outer mould. The sides are masked out for windows, then painted in the usual way. If any reader tries this method of construction it is advisable to smear gold size over the masking of the windows, as this will help the paper to stick until the first coat of paint is applied. It also prevents the paint from running on to the actual window when the masks are removed.

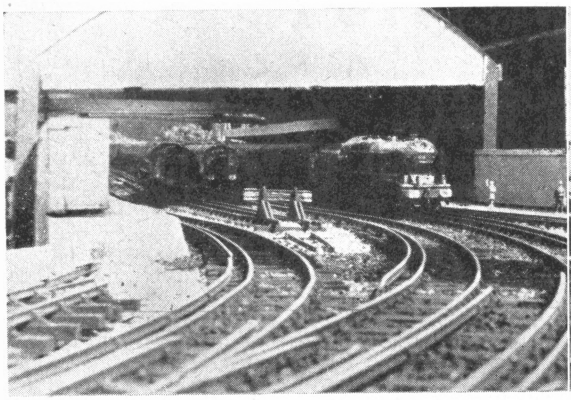
The construction of the layout is probably unusual. The ground is by no means level and drops about 2 ft. 6 in. away from the house. For the most part track is laid on ballast on angle-iron, the two sections being battened together at intervals with about 2 in. flat-iron. Wire gauze is inserted to accommodate ballast and the channels of angle-iron are then filled with ballast so that the centre portions are covered. Track is then laid on in the usual way. Drainage has been perfect. At other suitable parts a concrete trough has been built on brick pillars.

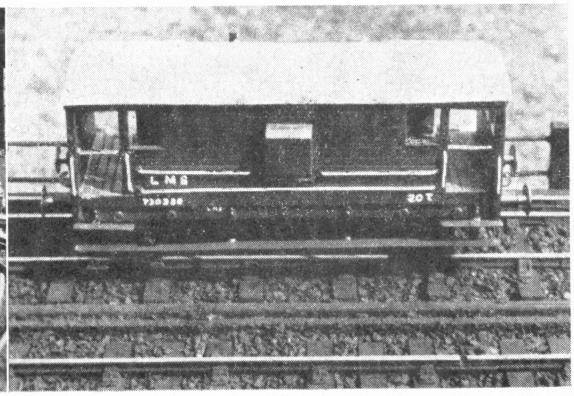
The layout consists of up and down main lines making a continuous run of some 150 ft. with a covered station at one end from which two lines diverge and run into a brick built " depot " which is about 20 ft. long. The illustrations will, I think, complete the mental picture readers may have formed by now. The covered station has 7 ft. long platforms and a curved roof of Perspex, which, by the way, has kept the inside perfectly dry up to now. There are two platform roads, two through up and down main lines and two carriage sidings. A

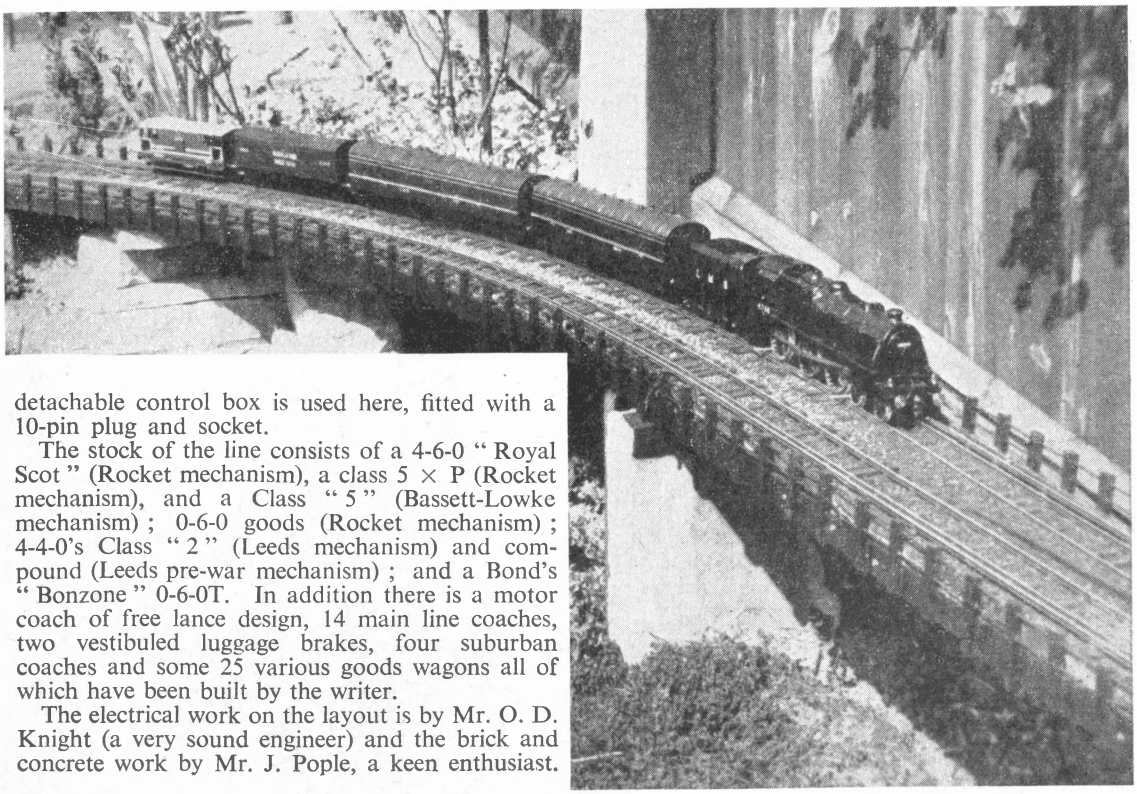












detachable control box is used here, fitted with a 10-pin plug and socket.

The stock of the line consists of a 4-6-0 " Royal Scot " (Rocket mechanism), a class 5 × P (Rocket mechanism), and a Class " 5 " (Bassett-Lowke mechanism) ; 0-6-0 goods (Rocket mechanism) ; 4-4-0's Class " 2 " (Leeds mechanism) and compound (Leeds pre-war mechanism) ; and a Bond's " Bonzone " 0-6-0T. In addition there is a motor coach of free lance design, 14 main line coaches, two vestibuled luggage brakes, four suburban coaches and some 25 various goods wagons all of which have been built by the writer.

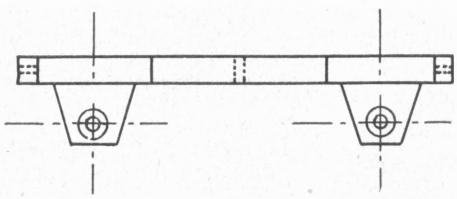
The electrical work on the layout is by Mr. O. D. Knight (a very sound engineer) and the brick and concrete work by Mr. J. Pople, a keen enthusiast.

A CERTAIN amount of trouble was experienced on my layout due to derailments of particular items of goods stock, and when these vehicles passed through the shops for overhaul it was decided to experiment with springing.

Various methods were tried, chiefly based on past experiences with 7 mm. stock, but they appeared to be only moderately successful. Accordingly it was decided to forget all preconceived ideas and to follow as closely as possible full-size practice.

This necessitated the provision of separate axle boxes and springs for each wheel of a vehicle, and a large number of experiments was carried out before the method about to be described was evolved. Several wagons have been fitted with this system of springing and have now been in service a sufficient time for it to be said to be satisfactory.

The method of applying the system to the standard " solebar and axle-guard " unit will first be described, it being made clear at this stage that the drawings have been prepared with as little irrelevant detail as possible for the sake of clarity.

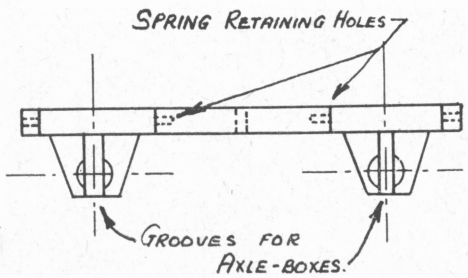


CASTING AS SUPPLIED.

FIG 1(a)

Fig. 1(a) shows the unit viewed from inside in its original state. Fig. 1(b) shows it when the first operation has been completed. This first operation consists of filing a vertical channel section groove through the centre of the projecting boss containing the original bearing hole. This groove should be deep enough to bring the finished surface level with the metal forming the back of the solebar and sufficiently wide to permit a piece of " OO " gauge brass rail to slide freely up and down in it. If the rail is too good a fit the spring will not be free as the axlebox will bind in the groove, which takes the place of the horn-plates in full-size practice. If the original bearing hole still shows it can be left as it will not foul the ends of the axles and will act as a kind of oil reservoir.

Fig. 1(b) also shows the second operation completed. A small diameter hole, about 1/32 in. is quite large enough, is drilled in the holding block portion of the unit. The method adopted was to use a hand chuck and insert the drill through the buffer shank hole in the end of the casting. Incidentally, this latter hole serves as a guide and helps to locate the drill. These spring retaining holes need only be about $\frac{1}{8}$ in. deep.



CASTING AS MODIFIED - VERTICAL GROOVES FILED THROUGH BEARING BOSSES & SPRING RETAINING HOLES DRILLED.

FIG 1(b)

The next operation is the manufacture of the axleboxes ; these are made of standard brass running rail and are of the shape and dimensions shown in Fig. 2. A jig can be prepared to facilitate their quantity production by driving steel guide-pins into a piece of hard wood as shown in Fig. 3. A piece of rail has its end rounded and is then centre-punched and drilled for the axle bearing. It is then placed in the jig and the top and bottom flanges filed away on the portion lying between the stop pin and and file guide pins. Finally, it is

sawn off using a small fine-toothed metal saw between the saw guide-pins.

The springs used are made from a single strand of steel wire taken from a Bowden control cable. They are L-shaped, the length of each leg being approximately $\frac{3}{8}$ in. In fitting up a wagon the spring is first soldered into the groove in the top end of the axlebox and then the other end is inserted into the

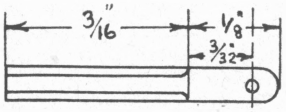
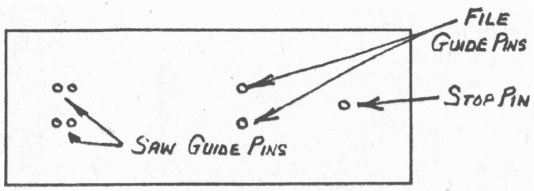


FIG 2.

AXLE-BOX — MADE FROM "00" GAUGE RAIL.



JIG FOR MAKING AXLE BOXES

FIG 3.

spring retaining hole in the casting, as shown in Fig. 4. The springs are then soldered to the casting. The lining up process is accomplished by slightly bending the springs where necessary so as to bring all the axle holes level with the correct axle centre lines. Having done this a touch of light oil should be applied to the axleboxes and they should be tested to see that they slide freely in their locating grooves,

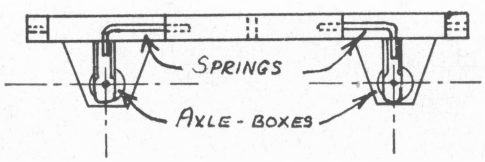


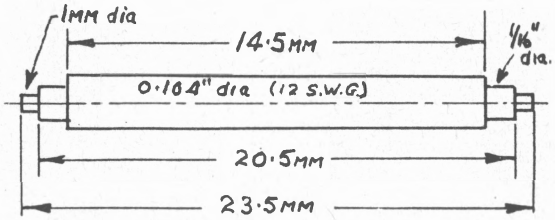
DIAGRAM SHOWING SOLEBAR/AXLEGUARD UNIT FITTED WITH SPRINGS AND AXLE-BOXES.

FIG 4.

remembering that a movement of 1 mm. each side of the axle centre-line is very generous, and will (it is hoped !) never be required during running.

The axles themselves need to be turned down at the ends to fit freely in the bearing holes in the boxes, it may be remarked that with this method all the advantages of pin point bearings are retained and exceptionally free running results.

The author's axles are turned to the dimensions shown in Fig. 5, which have the advantage of ensuring that the back to back dimension is maintained constant and also that the projection of the actual journal through the axleboxes is insufficient for it to rub on the casting and so damp, or even lock the springing. Another advantage which may be claimed for these axles is that a minimum lateral clearance for easy running may be simply obtained thus preventing to a large extent the "non-linearity" of wagons having too much side play.



AXLE DIMENSIONS USED ON ABBOTSBRIDGE DIVISION

FIG 5.

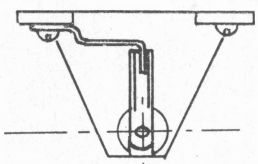


DIAGRAM SHOWING METHOD USED FOR SPRINGING SEPARATE AXLE-GUARDS.

FIG 6.

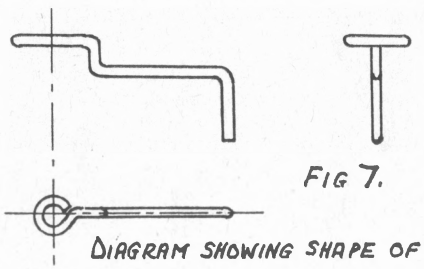


FIG 7.

DIAGRAM SHOWING SHAPE OF SPRING USED WITH SEPARATE AXLE-GUARDS

The springing produced by this method will be found to be rather "hard," but tests on vehicles having varying degrees of spring tension showed that this was desirable, as in several instances those with "light" and "medium" springs exhibited a tendency to oscillate wildly at certain speeds. It appears that, due perhaps to tiny irregularities in the wheel or rail surface or a minute eccentricity of a wheel on its axle, these speeds could produce a frequency of oscillation which coincided approximately with the natural frequency of the spring, and

violent vertical oscillation of wagons so fitted resulted, in some cases sufficient to cause derailments, and in nearly every case enough to render the running unnacceptable. With the "hard" springs, however, this undesirable feature was not present.

For wagons having separate axle-guard castings the first operation is the same, namely to file the vertical groove through the boss on the inside. The making of the axleboxes is also identical, the springs, however, are made a little longer and bent to the shape shown in Fig. 7. The loop at the end being placed over one of the screws fixing the axle-guard to the floor of the vehicle, as shown in Fig. 6.

In some cases these screws are not used and the axle-guards are soldered to a metal underframe. If such a case is met the end of the spring can be soldered to the lug on the axle-guard instead.

For bogie frames the method is similar to that first described above except that the ends of the springs remote from the axleboxes are fitted to the bogie stretcher plates, either by drilling and soldering if there is a sufficient thickness of metal or by plain soldering.

In every case rolling stock fitted with this type of springing has been found to run more freely, quietly and reliably than it did before. It also requires much less effort to move and will therefore be found to have the effect of increasing the capacity of locomotives.

In conclusion it may be stated that an exactly similar method has been applied to certain 7 mm. scale rolling stock operating on a nearby section with equally satisfactory results. In this case, however, scale "O" gauge rail was used for the axleboxes and rather thicker wire for the springs.

WITH THE CLUBS

The Model Railway Club

The club's new "O" gauge double road continuous test track is now nearing completion and has been in partial use during the recent track nights. The track is laid with fine scale components and the outer track provides 2-rail and stud contact electrification, the inner track centre and outside third rail.

The joint meeting at Birmingham with the Manchester Model Railway Society on September 28th, was quite as successful as last year's and the event is likely to become an annual fixture.

Meetings for November include an L.M.S. track night on November 6th and the annual rummage sale on November 20th, both held in the Ambulance Room, Waterloo Station, London, S.E.1, at 7.30 p.m.

Further particulars may be obtained from the Hon. Secretary, D. A. BOREHAM, 34, Shrewsbury Road, London, N.W.10.

West Wickham Model Railway Club

A successful exhibition was held on Saturday, September 20th at the large lecture hall. This was the club's second annual show and our improved and extended "OO" layout was on show as well as a gauge "O" test track which included two station roads and sidings. An interesting exhibit was the ground signal and various components kindly lent to us by B.R. beside which we placed their equivalent in 'OO" gauge. Support was given by Norwood and Croydon clubs who brought stands of static models.

As a result of the show several new members were enrolled. All those interested will be made most welcome at our Monday evening meetings which are held in our headquarters at the rear of Ballaam's Garage, Corkscrew Hill at 8 p.m.

Hon. Secretary: H. HAWKINS, 37, Pickhurst Rise, West Wickham, Kent.

Solihull & District Model Railway Club

The following meetings have been arranged for November:

November 6th. Talk by club member, followed by a discussion.

November 20th. Ten minute talks by members on items of general railway interest. Track night.

Prospective new members are welcome at any meeting, or they may contact the Hon. Secretary: R. SMITH, at 123, Highwood Avenue, Solihull, Warwickshire.

The Edinburgh and Lothians Miniature Railway Club

The Edinburgh and Lothians Miniature Railway Club began their winter programme on Friday, September 26th, with an excellent lecture on Railway Signalling by Mr. J. Pollard, who, until his retirement, was operating Superintendent for Scotland. The talk was illustrated with fine diagrams and questions from an enthusiastic audience were admirably dealt with by the lecturer. The "OO" and "O" gauge layouts are progressing satisfactorily.

Hon. Secretary: ANTHONY MURRAY, 98, Lothian Road, Edinburgh, 3.

Crowborough & District Model Railway Club

The club has recently been formed and the use of a suitable hall has been obtained. It is hoped that the construction of a two-rail 16.5 mm. gauge layout will commence at once.

Tonbridge Model Railway Club have invited members to join them on their outings, and have made the club a gift of magazines, etc., with which to start a library.

Anyone interested will be welcomed, and information about the club meetings, etc., can be obtained from the Acting Honorary Secretary, MR. C. E. PAIGE, Blendworth, Crowborough Hill, Crowborough, Sussex.

Trowbridge & District Society of Model Engineers

The society is holding its fourth exhibition at St. James Hall, Union Street, Trowbridge, for 12 till 9.30 on Friday, November 7th and from 10 till 9, Saturday, November 8th. The club is now working hard on a "OO" layout to be operated at the show, whilst Mr. Tonkin is developing a small "O" gauge stud contact layout which it is also hoped to have in operation. A keen small gauge section has developed and meets every Monday night at "Fieldways," Hilperton Road, Trowbridge, at 8 p.m.

Hon. Secretary: R. GODDARD, 22, Cherry Gardens, Trowbridge, Wilts.

Hull Miniature Railway Society

Meetings arranged for November are as follow:

November 6th. Track night and Question Time.

November 13th. Brazing demonstration by the president, Mr. R. Dally.

November 20th. "Scenic Effects." A demonstration by Mr. J. W. White.

November 27th. "The Timetable." A paper by W. A. Scutcher Esq., Assistant Stationmaster, Hull (Paragon) Station.

Meetings commence at 7.30 p.m. at Argyle House, Anlaby Road, Hull.

Hon. Secretary: R. EVERY, 10, Wells Street, Sandringham Street, Hull, Yorks.

Hitchin & District Model Engineering Club

Members recently enjoyed a Saturday afternoon's visit to the Kempston premises of the Bedford Society and we extend our thanks for the very cordial reception given us. Locomotives of the Hitchin Club were quite at home on the Bedford tracks, and as the weather was for once on our side, the pasesnger carrying track more or less monopolised attention.

However, the "O" and "OO" layouts excited keen interest, as did the efforts in 2 mm. scale of the secretary of the Bedford Society.

With the advent of longer nights, we are turning our attention increasingly to the work still needing to be carried out inside our new headquarters and this, together with the proposed rebuild of our gauge "O" layout and a series of lectures, will give us a very full winter session.

All enquiries should be addressed to the Hon. Secretary: E. KEITH, 25, Heathfield Road, Hitchin, Herts.

Wimbledon Model Railway Club

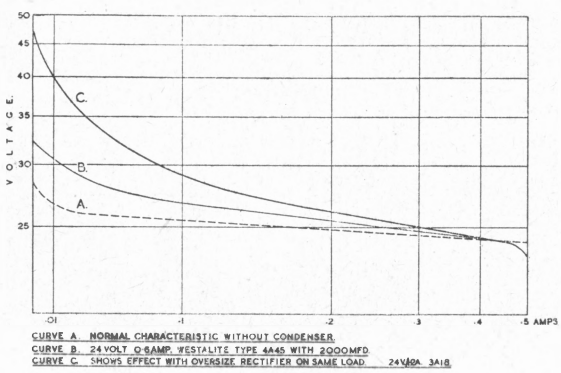
Meetings during November will be on Wednesday, 12th, when Mr. N. Wilkinson will be speaking on the Settle and Carlisle line, and on Thursday, 27th, which will be a track night. Both meetings at 32, Worple Road, S.W.19, commencing at 7.30 p.m. If you are interested in the hobby come along one evening as a visitor, we shall be pleased to welcome you. Further information will gladly be given by the Acting Honorary Secretary, R. C. J. DAY, 68, Chestnut Avenue, Esher, Surrey.

RECTIFIERS WITH CONDENSERS

by E. H. Whittaker

MR. FARNWORTH'S article in the December, 1951, MODEL RAILWAY NEWS, where he deals with the question of rectifiers with condensers in shunt with the d.c. output, prompts me to offer one or two comments. Mr. Farnworth is obviously an authority on the subject of rectifiers and as such I hesitate to criticise him, but from a purely practical point of view I find myself in disagreement with one or two of his statements.

As a result of investigations and experimental work carried out by certain members of the Manchester Model Railway Society, and Mr. G. H. Platt, M.Sc., in particular, it has been established that no appreciable improvement in the performance of small permanent magnet motors is achieved with



CURVE A. NORMAL CHARACTERISTIC WITHOUT CONDENSER.
CURVE B. 24 VOLT 0·5AMP. WESTALITE TYPE 4A45 WITH 2000MFD.
CURVE C. SHOWS EFFECT WITH OVERSIZE RECTIFIER ON SAME LOAD. 24V/40A 3A18.

condenser capacities of less than 2,000 mfds. Improvement continues up to 4,000 mfds, after which it ceases to be of sufficient value to warrant the cost. The improvements noted are a great reduction in sparking and burning of commutators, quieter running with less vibration, and a more even torque at slow speeds, providing good slow running characteristics. I am also of the opinion that magnet life will be increased by removal of the a.c. ripple which is always present with rectified d.c.

Mr. Farnworth's recommended limit of 200 to 500 mfds may be sufficient to remove the buzz usually experienced with solenoids when used on rectified d.c., and presumably he quotes this limit as dictated by his statement that too large a capacity will tend to overload the rectifier and transformer when the rectifier output is over 3 amperes. I am not in a position to dispute that statement because all my experiments have been carried out with "OO" equipment in which full load currents with well designed motors are less than ½ amp., and with this equipment I have not noticed any tendency to overheating. Nevertheless, as he says, the point to watch is the condenser, which should be rated at least twice peak voltage when the capacity is 2,000 mfd.

The only disadvantage to the use of a high value of capacitance is the very sharp rise in voltage which occurs at the low current end, and it will be seen from the diagram of curves that the d.c. output no longer assumes the nearly level characteristic as shown by the broken line, Curve *A*.

As most model railway operators know, the ideal controller is one which will control light engines right down to a crawl and at the same time must be suitable for controlling heavy trains without the disadvantage of having all the effective control crowded up to the high speed end. Even without condensers this is quite a problem in 4 mm. scale, particularly when locomotives fitted with precision built motors of high efficiency have to run on the same layout with commerical motors requiring more current. With the former, currents of under .1 amperes on light load are quite usual. Mr. Farnworth's contention that unsmoothed outputs are more suitable for less accurately made motors is, no doubt, quite true ; but to me this attitude is somewhat unprogressive. Amateur and professionally built motors are rapidly becoming more efficient and of better workmanship, and if full justice is to be done to them they must be operated from equipment which is designed to suit their improved characteristics. This entails careful choice of rectifier size and controller resistance, and where condensers are used across the d.c. output great care must be exercised to ensure that the rectifier is only just large enough for the maximum load it will be called upon to carry. No longer is it sound policy to say, "I think I shall need a maximum of 1 amp., let's make it 2 amps. for luck !" Curve *C* will show you what will happen if you use an unnecessarily large rectifier.

Curves *B* and *C* are not strictly accurate throughout, but are reasonably accurate at the critical low current end where they were plotted from actual measurements. There is no significance in the fact that they are shown in logarithmic form. This was merely done to facilitate plotting between zero and .1 amperes.

INTER-CLUB RALLY AT BIRMINGHAM

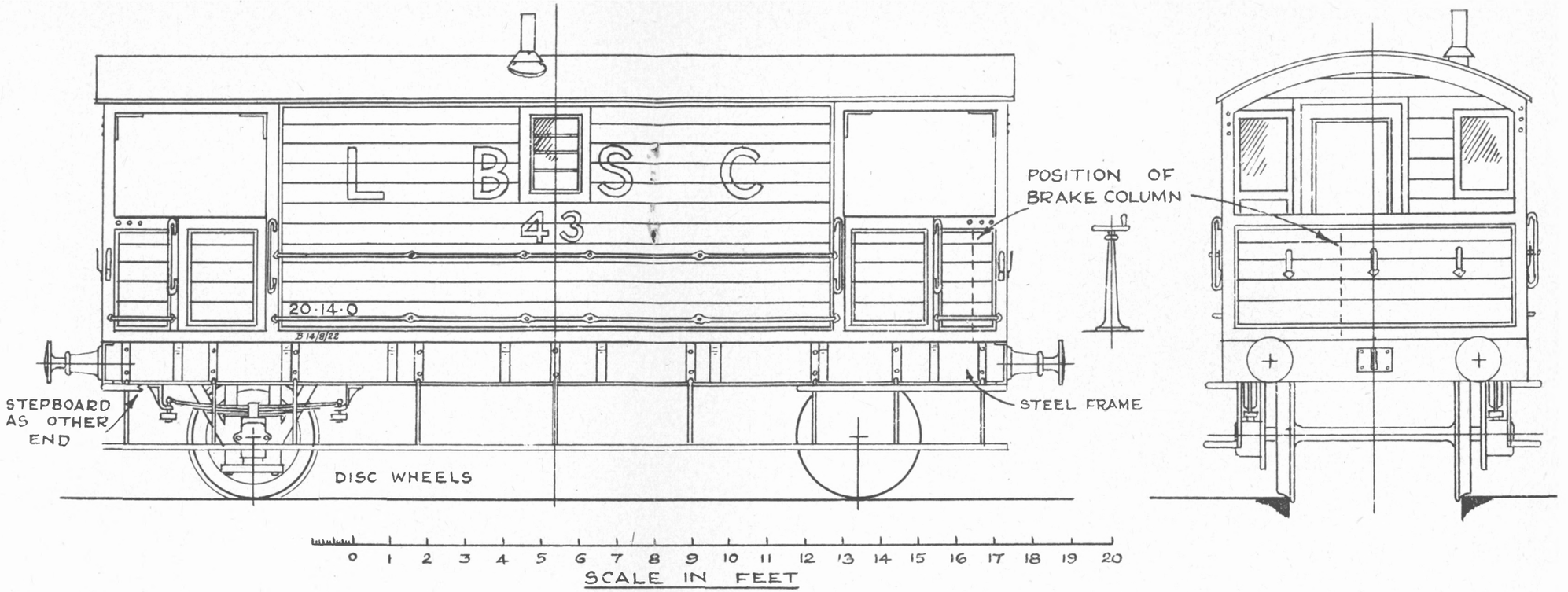
On Sunday, September 28th, a joint meeting was held at Birmingham between the Manchester Model Railway Society and the Model Railway Club. After the success which has attended this and the 1951 meeting, the event is likely to become a permanent fixture in the model railway calendar.

The 1952 inter-club rally, organised by the Manchester Society, was attended by 42 people who brought with them sufficient models to set up a small but select private exhibition. Among the visitors were modellers representing clubs at Chester, Merseyside, Leeds, Birmingham and Bedford.

An informal business meeting included a discussion on prompt notification of club members in the event of the theft of models. It was unanimously decided that next year, probably in September, a similar meeting would be held at Birmingham as this appeared to be the most convenient place to meet. It was agreed that next year's meeting would have to be on a broader basis than hitherto, to form a general get-together of modellers. In due course, there will appear in the model press an announcement of the date and place of this meeting which will, we hope, be widely supported.

L.B. & S.C.R. 20 TON GOODS BRAKE VAN

by R. E. Tustin



THE subject of this article is the last series of brake vans built to the designs of the L.B.S.C.R. They were turned out from the carriage and wagon works at Lancing, in 1922. These vans were intended for main line work and had the rather long wheelbase of 16 feet. The substantial steel underframe contained twelve pockets in which was placed sufficient ballast to bring the tare weight up to 20 tons. In the days of the Southern Railway 25 tons appears to have been adopted as the standard weight for a main line van and these large Brighton vans appear to have been brought up to that weight by increasing the amount of ballast.

The body framing was covered both inside and outside with easing boards and panelled out externally with half-round beading. My drawing is based on a diagram published at the time the vans were built and shows planking to the whole of the body sides. It will be noticed, however, that the van shown in the accompanying photograph has a steel plate substituted for the bottom two planks. I regret that I have no records as to how many vans were so fitted or whether, in fact, they were built in this manner. Possibly a more knowledgable reader may be able to assist in this matter.

Main dimensions given in the official write-up were as follows:—

Length of body	24 ft. 0 in.
„ over buffers	27 ft. 0 in.
„ inside guard's compartment	14 ft. 0 in.
Width of body	8 ft. 0 in.
Height—rail to roof	11 ft. 8 in.
„ —rail to top of chimney ..	12 ft. 9¾ in.
Width over top step board ..	8 ft. 10 in.
„ „ bottom „ „ ..	8 ft. 8 in.
Height—rail to top step board ..	2 ft. 11 in.
Height—rail to bottom step board ..	1 ft. 5¾ in.
„ — " " buffer centre ..	3 ft. 5 in.

In the guard's compartment was a stove, coal bunker, desk, two seats and lockers for shunting poles, etc. On each end verandah were a further two seats, one in each corner, measuring 1 ft. 4 in. by 1 ft. 2 in. and fixed 1 ft. 6 in. from the floor. There was also a brake column with a 12-in. cast handwheel and a ratchet. Each running wheel carried two brake blocks and all eight were applied when either of the two hand wheels were operated.

My knowledge of Brighton goods stock liveries is a little scanty and I am accordingly indebted to Mr. L. E. Brailsford for information on the colouring. He tells me that in Stroudley's days it was of a light lavender grey, but later R. J. Billinton used a rather darker shade more like the locomotive "shop" grey. As years went on the shade became darker until, in the last years of the Brighton company, it was of a very dark shade indeed. Lettering was white and handrails, lamp irons, buffers, draw-gear and axleguards were black. The roof was white. A typical number for one of these vans was 43.

The Southern Railway adopted L.S.W. colours for the goods stock, and painted the brake vans

(*Continued on page* 238)

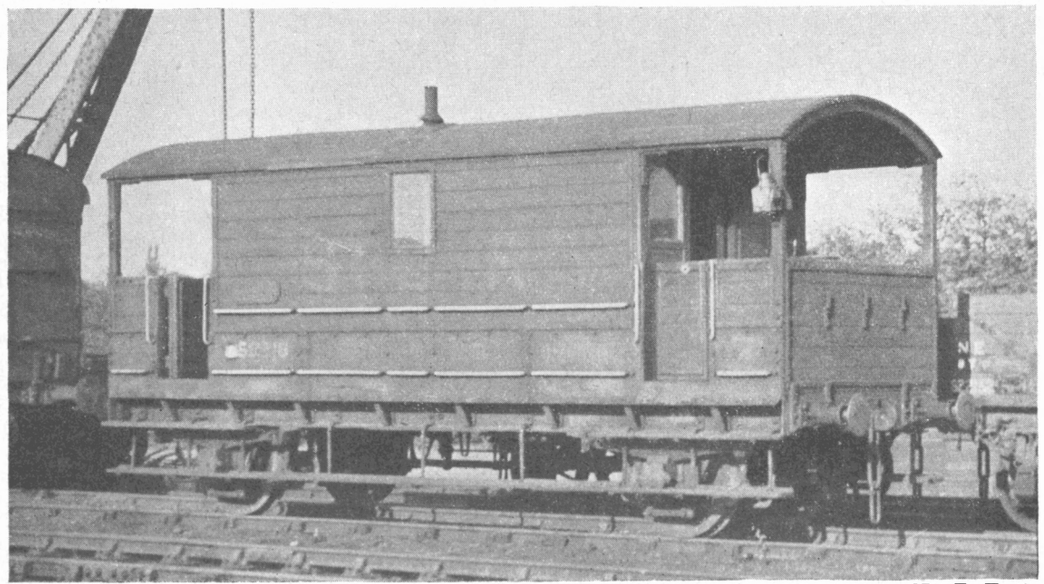


Photo by] [*R. E. Tustin*

S.R. No. 55918 *at Three Bridges in* 1946

This is "O" Gauge

by M.H.Cox

WELL, I hope I never have so many letters to answer again in one month. However, it is very gratifying to know that so many people are not only reading these articles, but are actively doing something about them. It really makes the effort and time involved seem worth while. Whilst on the subject of the letters you have written, I may as well clear up one or two queries that have been raised. This matter of the voltage required to work the motors is obviously troubling quite a few of you.

MAKING AN "O" GAUGE EX-N.E.R. 0-8-0 GOODS LOCO.

THIS MONTH: WORKING VOLTAGES; MAKING THE FLEXIBLE DRIVE

Some of you are worried because I want you to feed 16 volt to a 12 volt motor, and others want to know whether the whole thing will blow up if they use an 18 volt power supply—others still seem under the impression that it will not work at all below 16 volt. I am sorry about all this—it is so easy because one knows something oneself to take it for granted that everyone else knows all about it. I do not think I can cover the whole subject here but, if there's sufficient demand, or curiosity about it, I will try to produce a separate article devoted solely to "electricalities" as applied to model locomotives. For now, I will merely give an indication of the performance of my own locomotive on varying voltage inputs. The useful voltage range is from 5 volts to 25 volts, I cannot give it more than 25 as that is the limit of my power supply.

At 5 volts the engine running light moves at about 3 scale m.p.h. With 20 wagons, the same speed, on straight level track, requires about 8-10 volts, and a normal cruising speed of about 25-30 m.p.h. requires 10-12 volt, and 14 volt on a 4 ft. 6 in. radius curve. This range is probably about all that anyone will require with a locomotive of this type, unless you want a goods train dashing along at 60 m.p.h. However, increasing the voltage to 16 volt will just cause the drivers to slip on dry rails with the locomotive against the end stops. When running on the track, any increase of voltage above this value does not cause any appreciable increase of speed. That is why I say that 16 volt is the optimum, though, in fact, I have run the locomotive on 24 volts for an hour on test, no damage was done, but I think it got pretty warm ! I think it is worth bearing in mind that any rectifier does cause a voltage drop, and the one used for reversing is no exception, so, even though the track voltage is 16 volt, it is likely that the motor field windings will actually receive little more than 12 volt, the armature voltage will certainly be higher, but I think the field winding is the limiting factor.

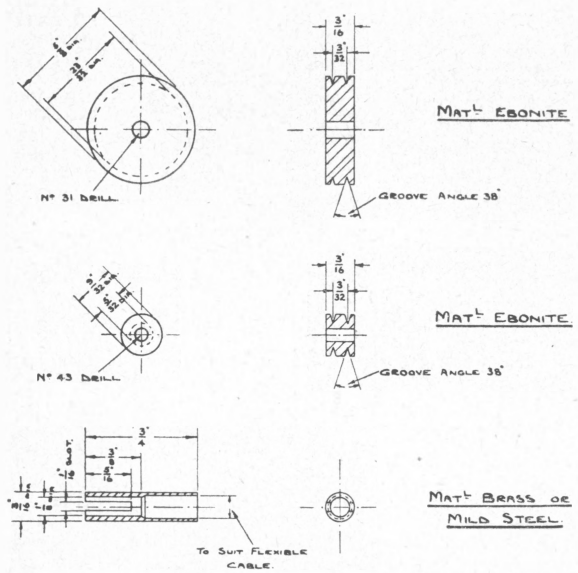
I am rather diffident about drawing conclusions about other people's ideas, but it does seem to me that lots of people are under the impression that because a motor is rated at 12 volt, it cannot be run from a power supply with a higher output, without burning out the motor. I have found that this view is held, or was anyway, by quite 50 per cent. of our local club members. Actually, of course, you can, because if you run say a 6-8 volt motor from a 24 volt power supply, via a resistance (speed controller), you will find that any attempt to advance the controller beyond a point where the track voltage is about 8 volts, will cause the engine to become airborne, or anyway, derail at the first curve. It boils down to using a little discretion and care. There is more to it than this, however, and I will try to cope more adequately with the subject at a later date if you are sufficiently interested, but do let me, or the Editor know, because I cannot divine your wishes, worse luck.

One vital point has arisen from correspondence and that is that I have led you astray over the motors, I can only plead ignorance. I thought that all these little grey motors of this pattern, were type CM3. I now know how wrong I was, it seems that there are several other markings applicable to motors of the same type. This rather complicates things as I can no longer tell you what to ask for. The best I can do is to say that you have the photographs in the articles, and the full size drawing in the September issue, and that anything that seems to look right and is the right size, will do. I am sorry if I made life

Continued from page 194, THE MODEL RAILWAY NEWS, *September*, 1952

unduly difficult for anyone—I assure you it was most unintentional.

One or two people have said that they reckon this locomotive cannot be built without a lathe, I must admit at once, that I should hate to do it myself, but I can assure you that one, anyway, is being built on " the kitchen table," and a good job it is too. Arising from this is a number of queries about using Meccano, or similar gears. I think I had better leave this to another time. It can be done, but let us deal with variations from the basic design after we have finished with the original. I only mention it now because, if you want to use these gears, the positions of motor and rectifier must be reversed and you will blame me if I make you change them round later.



Reference to the photograph of my 2-8-0 G.W. chassis in the May, MODEL RAILWAY NEWS will show what I mean.

Now I think we had better get down to work and do something about the drive from the motor to the layshaft. This is cut from a length of $\frac{1}{8}$ in. diameter silver steel rod. By the way, I see an error has crept into the July notes when the size given for the layshaft bearings was 3/32 in. This is wrong, and the fault is mine—I apologise. It is a good thing I did not make the error the other way—it is easier for you to make the holes larger, than to have to make them smaller !

Cut the layshaft off 2 in. long, square up both ends and de-burr. At a distance of $\frac{3}{16}$ in. from one end, drill a No. 65 hole through the shaft, at right angles to the axis, taking care that the hole passes through the maximum diameter. Now push into this hole a $\frac{1}{16}$ in. taper pin, knock it in tight and cut off both ends until they protrude $\frac{1}{16}$ in. on either side of the shaft, then trim off the ends of the pin with a small file. This double key so formed on the shaft, forms the male half of the detachable coupling between engine and tender.

The drive from motor to layshaft is by spring belt and here I must admit that some sort of a lathe is essential to make the pulleys. However, those not so blessed need not take fright, as I think this job can be done with patience, a drill brace, and an obliging helper to turn the handle. Both pulleys are made from ebonite because the coefficient of friction between spring belt and ebonite is greater than between belt and metal pulleys. You will notice that both pulleys are twin grooved, this is because the use of twin belts avoids the necessity for the excessive belt tension that is required to prevent a single belt from slipping. The very tight single belt is liable to break, whereas a reasonably tensioned one will run almost indefinitely. Make up the pulleys to the dimensions shown in the sketches. When boring the No. 31 hole in the larger pulley, run a small drill through first, finally using the No. 31 more as a reamer than as a drill, this will ensure the pulley being a good tight fit on the $\frac{1}{8}$ in. layshaft.

The small pulley is secured to the motor shaft with a $\frac{1}{2}$ in. $\times$ 8 B.A. cheese head screw which screws into the end of the motor shaft, you will find this shaft is already tapped 8 B.A. With a little wangling you will be able to make the pulley run true, when it does, do it up good and tight. Now remove the layshaft bearing blocks from the sub frame and slip the front one on to the layshaft, then press the end of the layshaft into the large pulley, sliding it along until, with the front bearing refastened to the frame, and the cross pin $\frac{3}{16}$ in. clear in front of the bearing, the pulley is vertically below the motor pulley. Now slip the rear bearing into place and measure the gap between it and the rear face of the pulley. From $\frac{1}{8}$ in. i.d. tubing, cut a sleeve to this length (i.e., length of the gap) to act as a spacer, and to locate the layshaft in the correct position. A similar spacer may be made for the gap between the pulley and the front journal, but I have not found this to be necessary.

The spring belts are made from the innermost member of a flexible camera release cable. I think any photographic supplier would be glad to give you a damaged one that will be quite suitable for this job. Measure the length of belt you want to provide adequate belt tension and cut off two exactly equal lengths. On each end of each length, bend up the last turn to form a hook, so that you can hook the two ends of each length together to form a continuous belt. You had better practise a few times on the spare bit of spring, because the knack is not easy to acquire. I am sorry, I cannot describe the process, but keep the children out of earshot while you do this bit !

Now, remove the rear layshaft journal once more, and loosen the front one, pull down the back end of the shaft and slip both belts over the pulley and into their grooves, replace the bearings. The belts now cannot jump out of their grooves because they will not pass between the pulley flanges and the sub-frame. Now spring the belts into their respective grooves on the small pulley.

The flexible drive connecting the power unit to the locomotive proper, may be either a piece of

spring curtain rod from Woolworths, or an old bit of speedometer inner cable. Either will do equally well. If you use the curtain rod, it is necessary to prestretch it. If you hold a length in your hand, you will notice that it has a decided tendency to stay straight, this is because each turn of the wire presses up against its neighbour due to the way the spring is wound. It is essential to remove this tendency, and this is done by pulling out the spring a little, until, when you release it again, the cord is sloppy to the feel. Whatever you do though, do not overdo this stretching business because, if you do, the drive will have a certain amount of twist in it, and the engine's movement will be jerky.

The end pieces for the cable are made from $\frac{1}{8}$ in. i.d. tubing, or are turned up from $\frac{1}{4}$ in. diameter brass rod. Both are $\frac{3}{4}$ in. long, and in each case the flexible cable enters the coupling by $\frac{3}{8}$ in., so, for $\frac{3}{8}$ in. depth, each coupling will have to be opened out to accommodate the cable. No dimension can be given for this hole, as it depends on the o.d. of the cable you use, but the cable should be a push fit in the hole if possible. One of these couplings must now be provided with a slot, parallel with the axis on the $\frac{1}{8}$ in. internal diameter end. As this has to slip freely over the layshaft, with the layshaft cross pin located in the slot, take care to make this slot accurately, it is $\frac{1}{16}$ in. wide and $\frac{3}{8}$ in. long. Now solder the end of the flexible cable into this coupling, it will be better to sweat this in, first tinning the last $\frac{1}{2}$ in. of the cable, an iron will not make a very good job of this. Couple the engine and tender together and then slip the sleeve on to the layshaft as far as it will go. Measure the length of cable required to reach exactly to the end of the worm shaft on the engine, and then cut the cable $\frac{1}{16}$ in. *shorter* than this length. Now solder, or sweat this end of the cable into the other sleeve, pushing it in exactly $\frac{3}{8}$ in. It now remains only to fasten this sleeve to the worm shaft, and this may be done by a $\frac{1}{16}$ in. taper pin through both, or, if you have fairly thick walls to the sleeve, with a grub screw, 8 B.A. should be sufficient. Now when you uncouple the engine from the tender it is only necessary to pull the two apart to release the flexible drive. To couple up, line up the slot in the sleeve with the pin on the shaft, and push together.

You are now ready to have your first test of the complete chassis. Block up the ends of the frames so that the driving wheels are just clear of the bench, and connect up the motor to the power supply. In all probability, especially if your fitting is good, the unit will be a bit stiff, provided this stiffness is not excessive, do not worry too much as it probably only means that the unit needs running in and possibly a few small adjustments. By the way, due to the sub-frame in the tender being rubber mounted, it is advisable to earth it to the main frames with a bit of flexible wire, otherwise you may have a bad connection at this point. Run the unit at a reasonable speed with the wheels blocked up for about half an hour, reversing the rotating two or three times during that period. Now try it on the track, and all should be well. The unit should overrun about 3-4 ft. with the current off, from full speed.

Now this is about as far as I intend to take you with this particular locomotive, as I do not mean, as I said earlier on, to describe the building of the " tin can." However, to round the job off in the next article, we will have a photograph of the complete engine and a few notes on certain details of the body that, on my edition, are not made in the usual way. We will also deal with the motor bearing modification for those who want a really silent job, and the simpler edition for the Meccano gearing addicts.

(*To be continued*)

L.B. & S.C.R. 20-Ton Goods Brake Van

(*Continued from page* 234)

dark brown to the sides and red oxide to the ends of both the verandah and the van itself. Handrails were white, buffers and running-gear black and the roof white. (As prototype roofs stay white for so short a time I personally feel that it is preferable to use a medium grey for model roofs even though the van is intended to be in nearly ex-paint shop condition !) The lettering can just be discerned in the photograph which shows the original Southern style with the large 18-inch letters with their centre line on the plank below the window. Suitable S.R. numbers were between 55908 and 55926. I noted that 55912 was marked " NEW X GATE " in sloping white capitals on the lower part of the body just above the underframe. I remember that this was a fairly common occurrence on ex-L.B.S.C. vans when in S.R. ownership, but not on ex-L.S.W. or S.E.C. vans. In later years, of course, the large lettering was discarded and a small " S.R." appeared above the number.

The board with rounded ends which appears just above the handrail on the left hand end of the van shown in the photograph reads " Not to work between TONBRIDGE and WEST ST. LEONARDS via BATTLE," and this appeared on all S.R. vans other than those of the standard S.R. pattern. The restriction was imposed because of the tight tunnel clearances in the Tunbridge Wells area on this line.

The three lamp brackets in line on the ends of the verandahs should be noted. The side lamp irons were originally fitted in line with these but later they were raised to the position shown in the photograph.

RAILWAY TOPICS

by J. N. Maskelyne, A.I.Loco.E.

The "G.N.R. Centenaries Express"

ON Sunday, September 28th, I had the privilege to represent *The Model Engineer* and THE MODEL RAILWAY NEWS on one of the most interesting and enterprising railway excursions ever organised. The occasion marked the centenary of the opening of the old Great Northern Railway from London to York, and a special train of ten coaches, about 380 tons gross load, hauled by the L.N.E.R. "A4" class Pacific locomotive, now No. 60007, *Sir Nigel Gresley*, conveyed some 400 railway enthusiasts from London to York over the direct route via Peterborough, Grantham, Newark and Selby and returned via Lincoln, Boston and Spalding.

The excursion was planned and organised by three private enthusiasts, Messrs. A. F. Pegler, H. T. S. Bailey and L. J. W. Smith. British Railways Locomotive and Operating Departments co-operated wholeheartedly, and the whole trip was carried through in excellent fashion. The engine was in fine fettle ; she had been most beautifully cleaned, and glinted in the early morning sunshine as she backed on to the train just after 9 a.m. Most ably handled by *ex*-G.N.R. engineman C. H. Simmons and Fireman S. J. Beslee, both of Kings Cross, the engine soon got into her stride after starting punctually at 9.15 a.m. We topped the summit at Potters Bar, 12¾ miles, in 17 minutes, passed Hitchin, 31.9 miles in 35 minutes, had bettered even time before we reached the 53rd milepost and then ran well inside the scheduled times for the rest of the outward run, including an unexpected and decidedly annoying dead stop of nearly three minutes at Doncaster. The running was at least equal to that of the best pre-war expresses to York, in spite of

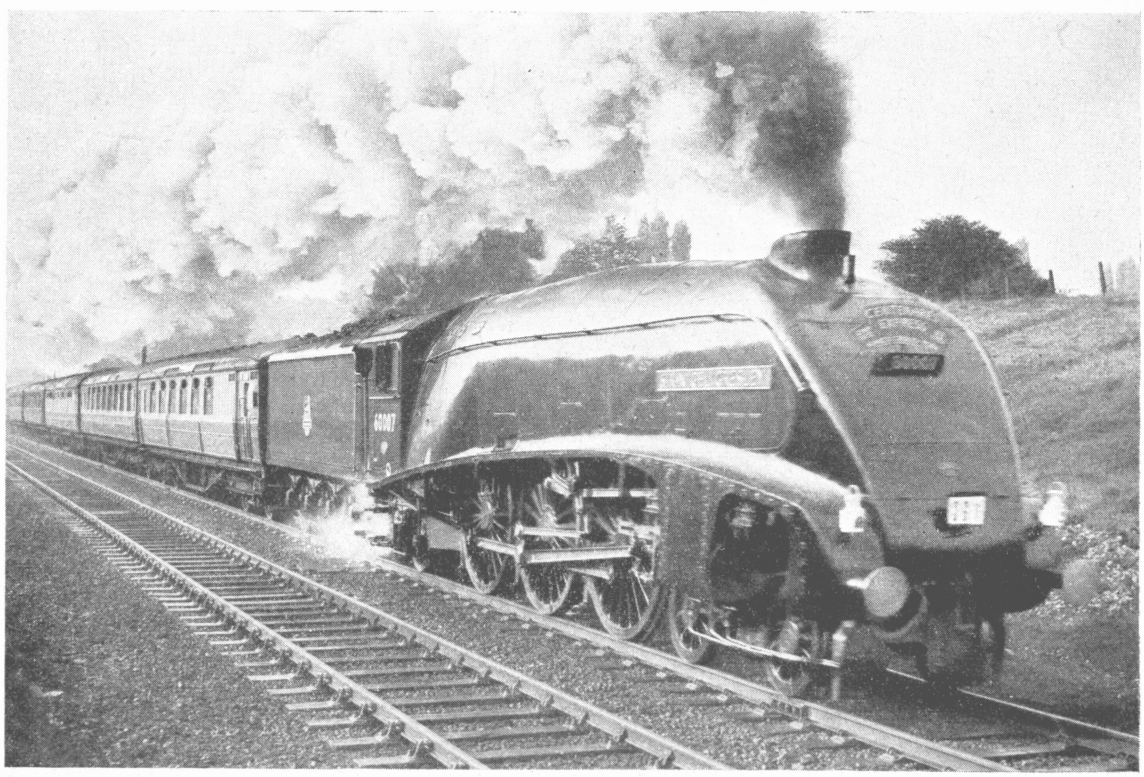


Photo by] ["*The Times*"

The Centenaries Express, arranged by the Eastern Region and a group of railway enthusiasts to celebrate the centenary of the opening of Kings Cross station and the "Towns Line," speeding through Hadley Wood on its way to York. The train was hauled by the Class "A4" streamlined Pacific locomotive "Sir Nigel Gresley."

the fact that the present prescribed maximum speed limit is only 85 m.p.h. as compared with the pre-war 95 m.p.h. I would like to call attention to our speed of 61¼ m.p.h. at the *top* of the climb to Stoke signalbox, the highest speed that I have ever noted at that point.

A Surprise

Just after passing this point, I received a welcome and unexpected invitation to go to the footplate of the engine. Hastily changing my overcoat for a blue mackintosh kindly lent to me by Chief Inspector Cameron, I followed him through the corridor tender into the cab, and after very brief introductions to the crew and an inspector on the footplate, he went back to the train, leaving me to enjoy myself as I well know how to do in such circumstances !

By this time, we were somewhat cautiously approaching Newark, but we were soon working up again to a fine speed while I was accommodating myself to the great change from the comfort in the train. By comparison, the engine was a raging, tearing monster bent on showing all and sundry that, although she may be some 20 years old, she has lost none of the vim and vigour that has always characterised the work of the " A4 " class. Adverse signals began to come into view as we neared Doncaster, checking us right down to a walking pace ; looking ahead through the cab lookout, I got the impression that the track through Doncaster station was not there (!), and I could see that the road was set to take us through a sharp bend to the left and then to the right into the carriage sidings. We threaded our way very cautiously between rows of coaches to within sight of a signalbox and came to a stop at a red light that glared ominously at us from a signal-post. Simmons blew an angry blast from the engine's chime whistle, but for a while nobody appeared to take the slightest notice of us ! Then I saw another engineman walking along the track towards us ; he was to pilot us over a most unfamiliar route of about half a mile, so that we could return to the main line north of Doncaster station. Slowing down to a mere crawl, we dropped our worthy pilot, and with another blast from that chime whistle Simmons once more stirred his noble engine into action. And what action it was ! In three miles, speed rose to 60 m.p.h. ; two miles farther on it was 70, and then we settled down to a steady 77 for several miles on end towards Selby. Reducing speed, we carefully negotiated the curve north of Selby ; as viewed from the engine cab, that curve must be seen to be believed ! Then, once again, we were off, speed rising rapidly to over 60 m.p.h.

Rocky

But now we were rapidly approaching York and it was time for me to rejoin my friends in the train. So, very reluctantly, I left my bucket seat and made my way back to the train, through the corridor in the tender. That tender was not riding too well, and in the 1 ft. 3 in. corridor I was subjected to a series of buffetings, first from one side and then the other, and as there was nothing to hold on to, I could not do anything about it ! I had just enough time in which to remove the good Cameron's blue mackintosh and put on my overcoat before we drew into York station 193¾ minutes after leaving London, all checks and the Doncaster stop included. I had spent more than three quarters of an hour on the engine, and seen at first hand some of the best locomotive work of the whole trip. I enjoyed it all the more because I had not expected it.

Easy Going

" Masterly " is the only word I can think of to describe the manner in which Simmons and Beslee managed their engine, and I mean it to be much more than a mere platitude. While I was with them, the cut-off indicator was never lower than 35 per cent. ; it was kept at about 20 per cent. most of the time, though it was occasionally brought up to 15. The firing was strictly on the " little and often " basis, and I noted that Beslee showed no signs of undue fatigue ; once or twice the safety-valve popped off with a truly deafening crash, but Beslee soon stopped that ! For most of the time the pressure-gauge registered 200-225 lb.

I learned afterwards that two ladies in the party had been given their baptism in footplate riding and had been thoroughly thrilled ; I remember my first footplate trip, and that was, I am certain, many years before of the two ladies mentioned were born.

Splendid Speeds

Mr. H. C. Creamer has sent me a fully-detailed log of the outward run to York, and it shows that we were exactly 4 minutes early at Retford; but we were 2½ minutes late when we re-started after the Doncaster stop. This was regained, *plus* 1 min. 20 sec., over the final 32.2 miles to York. We *averaged* 79.02 m.p.h. for 27 miles, Hitchin to Huntingdon; 76.77 for 44.4 miles, Knebworth to Holme, and 68.85 for the 15.3 miles, mostly *up* hill, from Tallington to Stoke. This was real L.N.E.R. running, and no mistake !

The time we had at our disposal in York was spent in the Railway Museum where the full-size locomotives that are preserved there are in good trim. A length of track was being laid outside, preparatory to getting the old Stirling singlewheeler out for sending to Kings Cross as an exhibit during the centenary celebration at that station.

The return run from York to Kings Cross was mainly interesting because of the route traversed ; there was no opportunity for spectacular locomotive work, though we ran fairly well to schedule as far as Peterborough. Delays on the main line, after that station, ruined the running and accounted for our reaching the terminus some 20 minutes late. But, for all that, it was a day that I would not have missed for anything ! The organisers, the Railway Executive officials, the enginemen, the dining-car crews, the guard, the signalmen and everyone else concerned deserve heartiest congratulations.

GARVE STATION, HIGHLAND RAILWAY

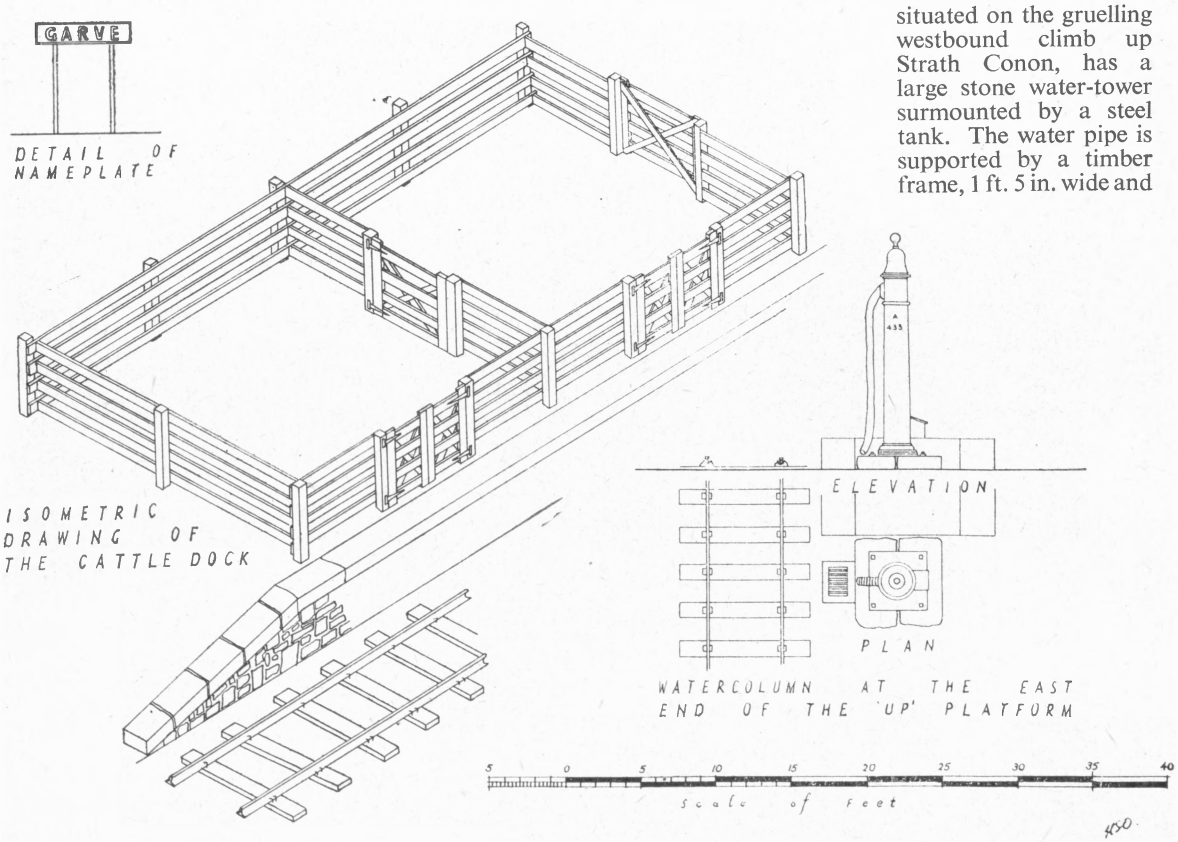
by H. S. Orbach,

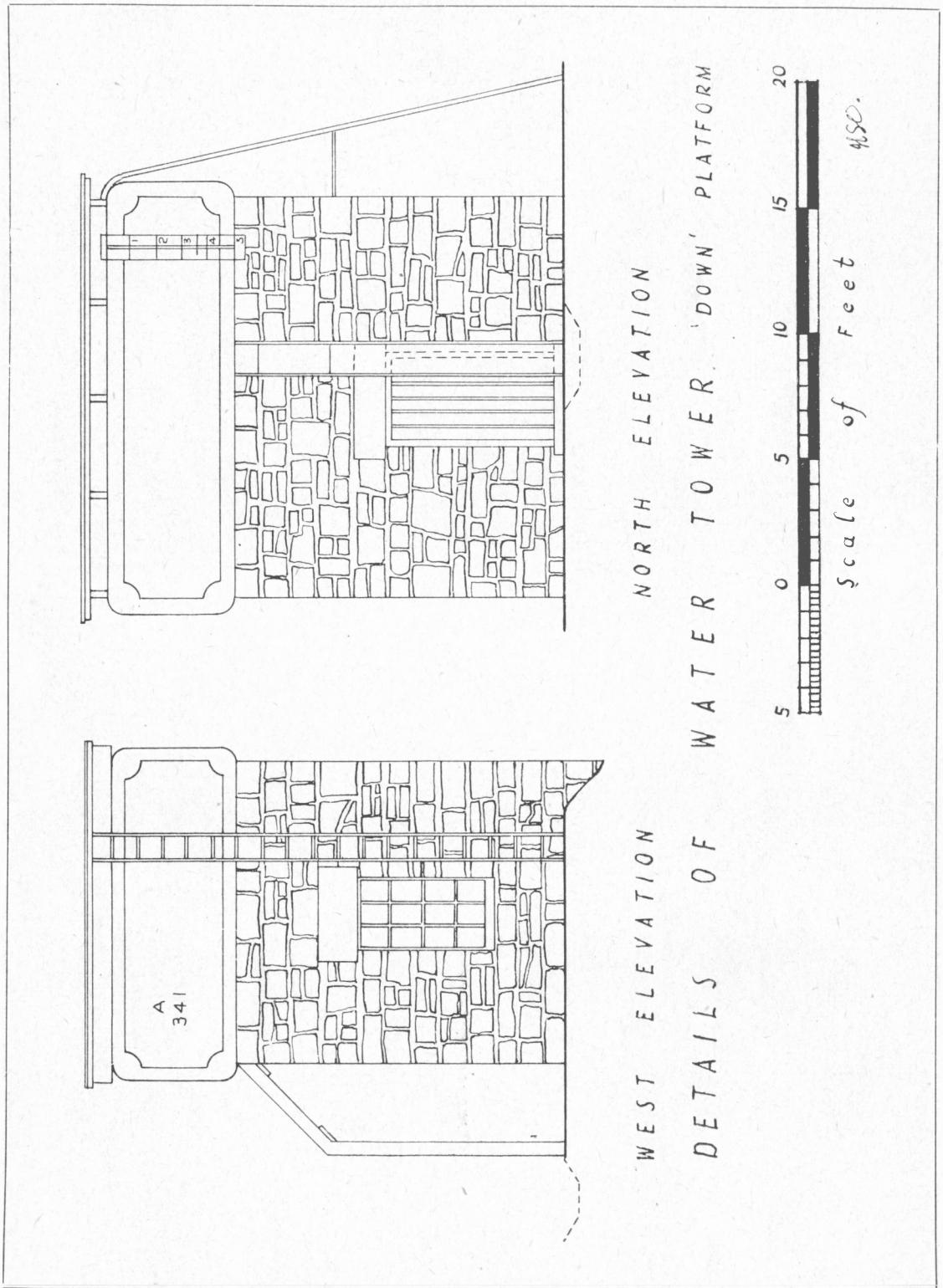
A.R.I.B.A.

Another view of the east box (see October M.R.N.)

IN view of the lengthy grades encountered on the Dingwall & Skye-Railway, ample provision was always made for water supply. Garve, which is situated on the gruelling westbound climb up Strath Conon, has a large stone water-tower surmounted by a steel tank. The water pipe is supported by a timber frame, 1 ft. 5 in. wide and

Continued from page 223, THE MODEL RAILWAY NEWS, *October*, 1952.

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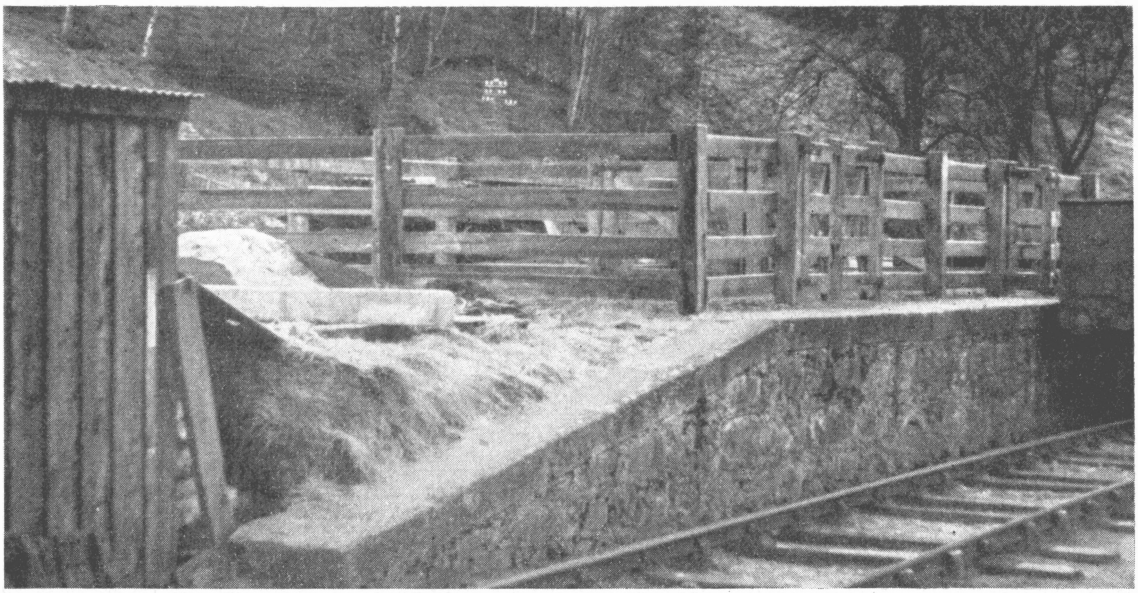


The cattle dock

7 in. deep, and discharges over a gully. The tank roof is protected by corrugated iron sheets supported on five 7 in. × 2 in. joists. The access ladder and the water-gauge are " Ahern " touches that should not be omitted.

On the " up " side a water-column is provided, supported by two stone blocks. The beauty of these old water-columns is surpassed, perhaps, only by the original columns installed on the Inverness & Perth Junction Railway, which resemble Greek Doric columns !

The station nameplates, one of which is provided on each platform, measure 6 ft. 3 in. × 1 ft. 3 in., are 6 ft. above the platform. They are supported by two light section, flat-bottom rail lengths at 3ft. 9 in. centres. The more usual Highland Railway nameplates, still to be seen in large numbers on the main line, were a more elaborate affair altogether, being supported by two timber posts, each surmounted by a very fine finial. The lettering was 10 in. high in both cases.

At present each end of the station is protected by a " distant," " home " and " starting " signal, all of which are mounted on tubular steel posts. There are also five shunting signals of the low-level Highland type.

This, then, completes the survey of Garve Station ; in conclusion, I would like to thank the Chief Regional Officer, Scottish Region, and the station-master, Mr. Leith, without whose kind co-operation the survey would have been impossible.

FOR THE BOOKSHELF

Railways Before the Grouping—No. 1. L.B. & S.C.R. by O. J. Morris. (London: Ian Allan Ltd.). 32 pages and cover, size 5½ in. by 7½ in. Profusely illustrated. Price 3s.

It is pleasing, in these days when so many more or less expensive books are being added to the growing bulk of railway literature, to find a well-produced and inexpensive handbook devoted to the pre-grouping era of our railway history. If this book sets the standard to be maintained in the forthcoming and, let us hope, extensive series, then railway enthusiasts are in for something good !

In this first example, the text is extremely brief, covering not quite three pages; but O. J. Morris excels in providing much entertaining information in the fewest possible words. This book relies mainly upon photographs of locomotives, coaches, trains and other scenes to provide a highly convincing impression of the old and greatly loved London Brighton and South Coast Railway, almost from the time of its birth until its demise.

Each of the photographs has its point and its own particular interest, some of them whole-page size; but if we were asked which is the best, we would be obliged to hesitate long before giving the answer. And we think we should award the palm to the one on page 14 of this delightful little book, depicting Stroudley's time-honoured 2-2-2, *Grosvenor*; if ever there was a stately locomotive typifying the very spirit of the proud railway that owned her, here she is, beautifully photographed, for all to see and to admire.

We are eagerly awaiting further additions to this series.

Talking Shop

"SCALESIG" KITS

ELECTRICAL CONTROL UNITS

BRADSHAW'S NEW 1952 CATALOGUE

DURABILITY OF PLASTIC WHEELS

N. H. GILLETT'S "SCALESIG" 4 mm. scale kits provide just the material needed for someone who wants a change from other model railway activities. Most people like signals. Even those who aren't interested in signal operation like them for their scenic value and the serious modeller considers them a must where there is more than one train around. These kits make up into good looking signals and perhaps their only drawback, from the point of view of the less skilled, is that a certain amount of fine soldering is required. Mr. Gillett has partly alleviated this by providing me with full assembly instructions and "exploded" drawings covering four types of signals which you will find below.

Many of the kits are versatile and can be made into more than one type of signal. It is hoped to supply, before long, suitable solenoids for the electrical operation of the signals. Full details of available kits can be obtained from Mr. Gillett at 2, St. Paul's Road, Richmond, Surrey.

Now for the constructional details. Fig. 1 shows the general assembly of a Western Region signal with the new type arm and Fig. 4 a modern upper quadrant type suitable for London Midland, Southern or Eastern Regions. Begin by forming the locating slot, and solder the signal arm bearing "A" to post "C" approximately 6 mm. down from the top. The lamp "B" is soldered on the opposite side of the post for type "E" (Fig. 1) and on the same side as the bearing and immediately underneath it, for type "A" (Fig. 4)

Pass pins "D" through holes in the post as shown, add washers "E," one to each pin, and thread on counter-balance weight arm "F" and small crank "G." Cut off the surplus ends of the pins and lightly rivet ends to prevent the parts from coming off but make sure they are free to move up and down. Note that on the type "A" signals the counterbalance weight is often placed higher on the post as shown in Fig. 4.

Screw the base "H" on to the bottom of the post, square up and file off the surplus thread underneath. If you are modelling the type "E" signal, cut a fine slot in the rear face of the post, approximately 20 mm. down from the signal arm bearing "A," to receive the edge of platform "I." Solder the platform in position, form the wire guard rail to the shape shown and solder to the platform and post.

For both signals, bend the bottom end of ladder "J" and solder to the back edge of base "H" and the top end to the platform "I" in the case of the type "E" signal. The top of the ladder on the type "A" signal is bent and soldered to the post just below the finial as shown. You must be very careful with your soldering here because of the close proximity of the other small soldered parts. Next, position the ladder stay "K" about midway up the post and solder to post and ladder. Form the small guard rail for type "A" signal with fine brass wire and solder in position about four rungs down the ladder.

For the type "E" signal insert the finial "L" in the top of the post (which is drilled to receive it), after placing

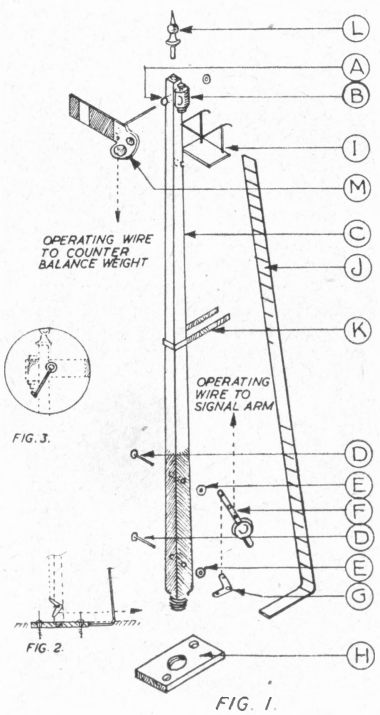


FIG. 1.

FIG. 3.

FIG. 2.

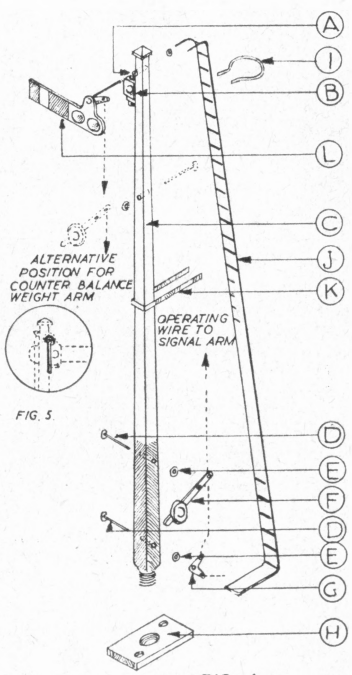
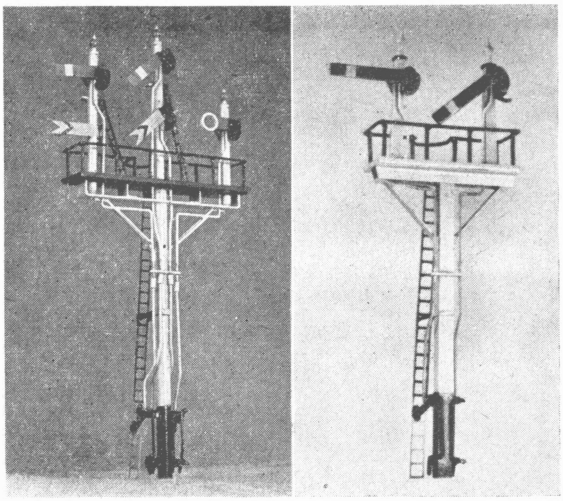


FIG. 4.

FIG. 5.



Two signals by N. H. Gillett. Left : A special order 3-doll Great Western signal. Right : The type G.W.1 kit fitted with L.S.W.R. arms

on the spigot a small amount of suitable adhesive. The finial should *not* be soldered in place as the heat will almost certainly cause the other nearby soldered parts to drop off.

Now pass the axle of the signal arm (" M " in Fig. 1, " L " in Fig. 4) through bearing " A," place a small washer on the spindle at the back and solder it to the pin. Carefully bend the last $\frac{1}{8}$ in. of the pin downwards at right angles, with pointed nose pliers, and then bend the remaining part of the pin close behind the washer in a downwards direction so that it forms the backshade and at the same time limits the arm movement. (See Figs. 3 and 5.)

Using the wire provided in the kit, connect the signal arm to the counterbalance weight arm and this to the crank as shown for each type of signal. This completes the construction of the signal and the assembly should be cleaned, all surplus solder being scraped or filed away, in preparation for painting.

The posts are black on the lower shaded portion and white above. The ladder, stay, counterbalance weight, crank, and platform rails are black. The Great Western finial is white with a red ball.

Fig. 2, by the way, shows a convenient way in which the base can be let into the baseboard and covered over with ballast. This should be done wherever possible so that the post appears to be " planted " in the ground which obviously will give an improved appearance to the model.

Electrical Control Units

A folding leaflet available for the price of the postage (2½d.) from MESSRS. HAMMANT & MORGAN, 2, Chestnut Avenue, Wembley, Middlesex, gives details of several items of electrical equipment, applicable to model railway control. All the power units, controllers and flash switches are available in smart metal containers ; the controllers, flash switches and cut-outs are also supplied for panel mounting while the solenoids can be conveniently fixed to the baseboard with the top plate flush, leaving only the operating crank above ground level.

These units have been specially designed for model railway control and are built on the unit construction principle, uniform in finish and dimensions. The units may be assembled in an infinite variety of combinations so that control boards can be built up to operate any type of layout from the simple table top oval to the most complex exhibition system.

Durability of Plastic Wheels

An interesting report from the proprietors of " The Model Railway," Boscombe points out that, according to research conducted on their layout, the plastic wheel is in fact superior to the metal one which hitherto has been considered ideal by the majority of modellers. To illustrate the results of these tests they enclosed two sample pairs of REX plastic wheels with their letter. The first pair, 14 mm. diameter, have come from a passenger train which has run approximately 1,050 *actual* miles and the second pair, 12 mm. diameter, from a goods train which has covered approximately 750 *actual* miles. Here are some extracts from the letter with my comments on each appended :

" In each case (14 mm. and 12 mm. diameter) the running has been completely trouble-free and has revealed the following points :

" (1) No visible wear on treads or flanges ; nickel-plated brass wheels show very considerable grooving of treads and thinning of flanges for similar mileages." Completely trouble-free running would presumably mean no derailment of any kind during the time taken to run 1,050 miles. Frankly, this is hard to believe but I accept it ! I partly disagree with item (1). The tread on the used wheel is duller and slightly flatter than a new one ; the journals have slight scoring around the bearing surfaces. Flanges appear to be unaffected.

" (2) The plastic wheels reduce running noise to an astonishing degree." This is true and I think it is a good point, but we must remember that there are some people who prefer metal to metal contact simply because they *want* their trains to make a noise.

" (3) The plastic wheels pick up practically no dirt and continue to give smooth running throughout a period when metal wheels have to be cleaned time and time again."

" (4) Breakdown of insulation is of course an impossibility." Bearing in mind the REX wheel/axle type of construction this statement is unquestionable.

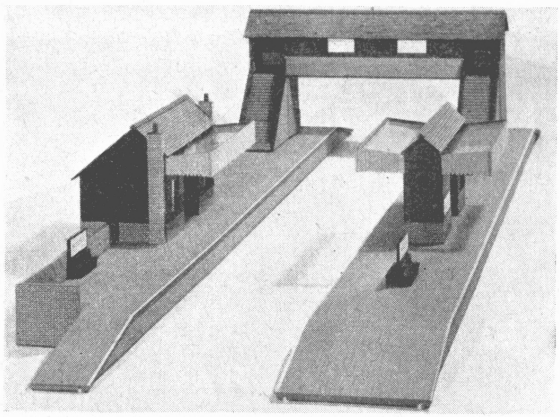
For my part, I am surprised at the results of this test, having always regarded metal wheels as " better runners " though my only trouble with plastic wheels has been the occasional cracking of flanges. With the improved plastics which are now employed, however, this trouble seems to have been overcome and the popularity of the plastic wheel will undoubtedly grow. But I still find myself thinking that even in the face of the most conclusive scientific data, a large proportion of the great British railway modelling public will maintain a demand for metal wheels just because they " like 'em."

George Bradshaw's 1952 Christmas Catalogue

All " OO " gauge enthusiasts should send for this comprehensive list of equipment covering many manufacturers' products. The list is an 18-page duplicated fully-illustrated production, and is available free and post free on request. Further, Mr. R. G. Bradshaw, who is in charge of the model railway department assures me that he guarantees to supply from stock every item in the catalogue with the reservation that where the manufacturer lets them down, they in turn may have to let the customer down. Even so, the guarantee is in itself an indication of the sort of service customers may expect from this supplier.

Acro Products

Concurrent with the appearance of Bradshaw's new catalogue is an announcement that they are now the sole



"Woodside" Buildings, by B. J. Ward Ltd.

concessionaires throughout the world for Acro Products and all wholesale orders for these components, which are well known for their high quality, should be addressed to GEORGE BRADSHAW (SUSSEX) LTD., 5 & 6, Western Road, Hove, 2. Modellers can buy through their usual Acro stockistsor direct from Hove in case of difficulty.

Ready-made Station Buildings

Layout planners who want to put up a station in a hurry will find food for thought in the "OO" gauge components marketed by B. J. WARD LTD. The illustration shows two types of platform and shelter and a footbridge. A signal box is also available.

These parts are very strongly made of wood, covered in appropriate places with dead scale brickpaper (which is available separately) and although they are simple in approach, they contain many details normally overlooked. I would particularly point out the very carefully done "planking" on the platform.

For the convenience of those who have a station layout on the drawing board I give the following dimensions. The single face platform is 2⅜ in. wide and 3½ in. deep overall, from the platform face to the rear extremity of the shelter. The island platform is 3 in. wide and both types are 29 in. over ramps, with 23¼ in. of this at platform height. The footbridge is a convenient width for the usual double track arrangement. The platforms are supplied in three sections which plug into one another very accurately, and presumably additional sections can be inserted to increase platform length.

These buildings should, by now, be available for inspection and purchase at most of the leading retailers. They are known as the "Woodside" range.

C.C.W. Prices Reduced

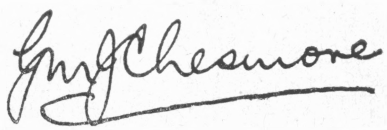
In the second edition of the C.C.W. PRODUCTIONS catalogue many price reductions are shown, both for "O" and "OO" kits. New developments include "OO" glazing strip with printed window ventilators and a completely new range of paints.

The aim of C.C.W. is eventually to supply the model carriage builder with everything he needs and it seems they are well on the way to achieving their object. The range of kits contains something for every taste, and among the many new ones listed I would like to mention the L.M.S. 62 ft. 1st-3rd Brake flush sided corridor coach; S.R. 3rd Restaurant-Kitchen car (Portsmouth electric); G.W.R. "Riviera" stock, four types; six types of early G.W.R. bogie coaches, corridor and non-corridor; L.N.E.R. 61 ft. 6 in. Buffet Car; two 3rd class Pullman cars for the "Queen of Scots"; and three new van kits including the Harwich Train Ferry van with its guard's box on the end, *a la* continental practice.

Two pages are given to sectional drawings with dimensions of the various components which are available separately and can be used to construct any type of coach or van.

Many metal fittings are illustrated in the accessories section, notably a gas cylinder for early type gas-lit coaches and some kitchen cars and the stop press announces that first-class chairs for first-class Pullmans, dining car chairs and tables are in production, not to mention scale beds for sleeping cars.

All modellers interested in coaching stock will find this catalogue a useful reference and guide.



EDITOR'S MAILBAG

"OO" Gauge Automatic Couplings

DEAR SIR,—I was interested to read Mr. Fullerton's letter, and you may care to publish the following comments in reply.

Having converted quite a number of Trackmaster wagons, and built others from a number of the well-known cast underframe details, using the ERG Masterpiece and other similar products, for use on Hornby Dublo and Trix railways, I am a little surprised to read of Mr. Fullerton's difficulties.

I have usually used Peco, Hornby, Dublo or Trix type wheels, and, of course, their coupling, which operates quite successfully with either of the proprietary products. The only difficulty is that the Peco coupling being smaller and to much neater proportions, is inclined to uncouple if used on very bumpy track, but this fault is really with the track and not the coupling, as quite apart from coupling problems so much more realism in operation can be obtained if the proprietary track is substituted for scale track such as Peco-Way fixed on a permanent baseboard.

Incidentally, the Peco coupling Mark II has an improved spring clip permanently fixed to the bracket, which gives no trouble whatsoever, but I have experienced trouble with the earlier type, when the spring was supplied loose. This I cured by spotting the inside of the stud with solder, so that the spring could not jump off.

Yours faithfully, A. T. HORTON.

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Readers desiring to see the Editor personally can only do so by making an appointment in advance.

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The utmost care is taken to exclude announcements from doubtful sources, but we cannot accept responsibility or guarantee the good faith of advertisers.

The Sports Depot (M/C) Ltd. for model railway bargains. Gauge "O." Hornby tank loco, 25s.; 501 loco, 30s.; Clockwork rails, 6d. each; Points, 2s. 6d. and 3s. 6d. each; Buffers, 2s.; Hyd., 3s. 6d.; Wagons, 2s. to 4s. 6d. each, etc.; Coaches, 12s. 6d.; Signals, 3s. 6d.; Elec. rails, 9d. each; 12 V d.c. locos, 4-4-0 (Leeds mech.), £4; B.L. 4-4-0, £4 10s.; Leeds 4-4-0, £4. Gauge "OO." Sir Nigel loco and tender, £3; rails, 2s. 6d. each; Points, 8s. 6d. each; Controller, 35s.; Transformer, 30s.; New wagons from 4s. 8d. each. Trix 0-4-0 loco and tender, 35s.; 4-4-0 compound, £4 10s.; Diesel Flyer, £4 10s.; Controller, 10s. 6d. and 22s. 6d.; Transformer, 15s. and 30s.; Wagons from 2s. 6d. each; Coaches (link coup.), 6s. 6d. each; Gaiety loco, 50s.; Scalemaster 4-6-4 and tender, 35s.; Two coaches, 7s. 6d. each; 20 V, a.c. 4-6-2 "Continental" £4 10s.; Rovex two-rail set, new, 75s.; Rovex loco and tender, 35s.; G.F. new Pullman coaches, 27s. 6d. and 30s.; Formo track and points; Wrenn points. New Meccano sets and selection of second-hand Meccano parts.—4/10, PRINCESS ROAD, Moss Side, Manchester. Tel.: MOS. 1757.

R. G. Dettmar & Co., Model Railway Engineers. The Read-Maxwell 5-pole, 12 or 24 V motor for "O" gauge. As used by British Railways, price 67s. 6d., worm gear sets, 18 or 25-1, 9s. 6d. each. Cast-iron wheels with squared location, all sizes in stock. Stud contact collectors fitted to any "O" gauge loco. Prices of all above on receipt of 2½d. stamp.—R. G. DETTMAR & Co., Ashtead, Surrey.

Staffordshire's Model Shop since 1936. Model railwaymen always welcome. New "OO" layout.—J. W. BAGNALL, South Walls Road, Stafford. Tel. 420. M.E.T.A.

Transformers for "direct" or "split potential." Rectifiers, auto cut-outs, ammeters, volt meters, reversing controllers power units, large stocks. List, s.a.e.—HARRY GILPIN, 76, High Street, Walton-on-Naze, Essex.

Handyman's Shop, 27, Blakey Moor, Blackburn. Agents for Acro, Peco, ERG, Walkers, Wrenns, Hamblings, etc. Hardboard strips (all sizes for tracklaying).

Pre-Grouping Coaches. 4 mm. card parts. Embossed panelling. Thirds-Clerestory. Midland 46′ 7½″, 4s. 3d.; G.W.R., 46′ 6″, 4s.; N.E.R., 45′, 3s. 9d.; Six wheel L.S.W.R. G.N. of Scotland, 2s. 6d.; N.E.R. 32′ brake van, 3s. 6d. Post 3d.—HANSON, 57, Sutherland Avenue, Fenham, Newcastle-on-Tyne, 4.

America's Most Authoritative Magazine "Model Railroader" one year post free, 39s. Back numbers 3s. 6d. each. Free booklet of other American magazines from—WILLEN LTD., (Dept. 42), 101, Fleet Street, London, E.C.4.

Yeovil, Railway Modellers are invited to call. Agents for Trix, Peco, Rovex, Graham Farish.—"HINTS FOR RADIO," 36, Middle Street, Yeovil.

Gauge "O" scale railway clockwork Mills track, points, lever frame. B.L. Hornby locomotives, £10 or sell separate. S.A.E. for lists.—A. SEAWARD, 36, Crispin Cres., Beddington, Croydon, Surrey.

Trix 2-4-2 tank locomotive, Dublo remote points, point motors, many Trix and Dublo items. S.A.E. list.—BOX NO. 6540, MODEL RAILWAY NEWS Offices.

Nickel Silver Turnouts, "OO" scale. Two-rail. Bullhead. Radius 3½′. Sleeper spacing 10 mm. Length 11½″. 10s. 6d. each. In steel rail, coarse scale, 8s. Post free.—A. RENFREW, West Linnburn, Shandon, Dumbartonshire.

Rotary Converters. For operating model railways from d.c. mains. These are converted *ex*-Government units, giving approximately 12-15 V at 3 A d.c. from 230 V d.c. Fitted in steel cabinet with main switch and lead and radio noise suppressor gear. Price 25s. each. Postage, 2s. 6d.; Metal rectifiers, 12 V, 1 A, 8s. 6d.; 3 A, 14s.; 4 A, 21s. Postage, 1s.; 6 V relays, with two heavy duty break contacts. Price 2s. Post 9d.; Transformers, 230 V, a.c. input, output 15 V at 2½ A, 12s. 6d. Post 1s. 6d.; Selector switch boxes. Containing 16 toggle switches, terminal strips, etc. Price 12s. 6d. Post 1s. 6d. Send for our Government surplus list, price 6d., post free, which contains over three hundred useful items for the experimenter.—A. T. SALLIS, 93, North Road, Brighton.

Hornby-Dublo Tank Goods Set, £8; Gresley passenger set, £9; "Duchess" set, £10. All perfect and including transformers. Gresley locomotive, £3 5s., points 7s. 6d.—BOX NO. 6572, MODEL RAILWAY NEWS Offices.

"O" Gauge. Six clockwork mechs. for sale. One new, unused. S.A.E.—HOWAT, 23, South Street, Greenock.

Trix Station Set No. 3006, unused £1 5s. Bingascope projector two films, hand-driven, good condition, £6 10s. or highest offer.—GELL, Delph Cottage, Disley, Cheshire.

Bassett-Lowke Mogul L.N.E.R. steam good condition, £9 10s. Leeds 0-4-4 Southern tank, 12 V, d.c. new, £8. Both "O" gauge.—WILMAN, 3, Baliol Road, Hitchin, Herts.

Scale Hand-Built "OO" L.M.S. corridor (porthole type), price 29s. Ex-Midland close coupled, three coach suburban set litho (protected), complete 43s. Detailed open, 14s. Litho open 8s. 6d. All in perfect condition (unused). Post free.—SOUTHON, 8, Victoria Parade, Muswell Hill, London, N.10.

Hornby Dublo. Five locomotives (two Duchess, one Sir Nigel Gresley); four L.M.S. coaches, 14 wagons, 14 points, four isol. rails, 30 straights, 16 curves, three transformers, controllers, sheds, stations, etc. £28, or reasonable offers.—MELHUISH 23, Northiam, Woodside Park, Finchley, N.12 HIL 6293.

New Gauge "O" List, wagons, vans. Post free.—W. W. TASKER, 7, Sunny View, Argoed, Blackwood, Mon.

G.W.R. "Hanbury Hall" No. 4931 in Gauge "O" New hand-built model hardly used, £27 10s. Several other G.W.R. locomotives.—Box No. 6578, MODEL RAILWAY NEWS Offices.

Sale "O" Gauge Layout. L.M.C. 4-4-0, £5 10s. 0-6-2 motor faulty, 35s. Many bargains, s.a.e. for list.—DAY, 27, Carr Road, Nelson, Lancs.

16.5 mm. 2-Rail Station Layout, 14 points, wired complete scenified, comprehensive goods and locomotive yards, platforms, etc. Reasonable, full details, apply—Box No. 6584, MODEL RAILWAY NEWS Offices.

Sale Bassett-Lowke steam Enterprise gauge "O", two clockwork locomotives, rolling stock, track, £12 the lot.—Box No. 6583, MODEL RAILWAY NEWS Offices.

Trix Layout. Perfect order, 11′ × 4′, three locomotives, 4-6-2, 4-4-0, 0-4-0, five coaches, nine trucks, transformer, two controllers, five stations, two signal boxes, 22 signals, 85′ track, five pairs points, many accessories. Cost £75. Offers, good reason selling.—H. F. BIRD, 140, Newton Road, Birmingham, 11.

Rail Car. Good as new Marklin gauge "O" clockwork, brake/reverse. Nearest offer, 65s.—MORGAN, 36, Woodland Road, Barry, Glam.

"OO" 16.5 mm. 3-rail non-continuous layout, about 40 yd. track, 25 points one crossover mainly N.S. Bonds 0-4-4T S.R., cast body 0-6-0T bogie railcar (S.R. bogie), Marklin 0-4-0 mech. (Bonds wheels), all 6 V. Dublo 0-6-2T (12 V unused), three articulated and three single coaches (Merco sides warped), 12 litho wagons, three bogie wagons, point levers wagon, carriage and signal parts, switches and resistances. What offers for the lot?—EDWARDS, Bullwood, Hockley, Essex.

Gauge "OO" 16.5 mm. locomotive kits, rolling stock and track parts, lineside accessories, etc. Books, Dinky toys. S.A.E. for list.—BROUGHTON, 12, Luther Road, Winton, Bournemouth.

"OO" Gauge. For sale, quantity coaches, goods stock, points, track, miscellaneous bits and pieces. S.A.E. list.—AUSTIN, 36, Grove Street, Leamington Spa, Warwick.

Sale. 6′ × 4′ G.F., 2-rail scenic layout. Elevated with tunnels, bridge, buildings, embankments. 4-4-4 electric locomotive, two coaches, transformer, isolating switches, photograph available, £25.—HARRIS, 26, Jubilee Road, Byfield Nr. Rugby.

Trix Twin. Two locomotives, coaches, wagons, electric points, crossing, "Manyways" station, etc. Also 100 Dinky Toys (civil and Army). Good condition. Offers? Details from—69, Green Curve, Banstead, Surrey.

L.M.S. Vestibule Coaches. Completed and lined. 3-rail, 17s. 6d. Only limited number in stock. Send 3d. stamp for leaflet.—COACHCRAFT, 8, Thornhill Road, Heaton Mersey, Stockport.

L.M.S. 4-4-0 "OO" Kits. Everything to build the locomotive and tender, no soldering, screwdriver assembly, no other parts to buy. 3-rail, 73s. 4d., 2-rail, 79s. 9d. Send 3d. stamp for leaflet. Buy now whilst stocks last. Cannot be repeated. From all dealers or—K.M.R., Lothair Street, Manchester, 13.

Free Postage. "OO" gauge metal coaches, Jaypee, Jaycraft, etc., 42′, 57′, 65′ complete with bogies ready to roll, 21s. each. State company, Meta dealer. 1,000 items in "OO" stocked turnouts, crossovers to order. Enquiries, stamp please.—HASLAM, 129, Chorley Old Road, Bolton.

Sale. Tools and dies for popular "OO" gauge metal rolling stock. High grade. Steady sales, £95.—Box No. 6616, MODEL RAILWAY NEWS Offices.

"OO" C.C.W. Coach Parts. Nickel-silver rail, accessories. S.A.E. list.—CORBETT, 3, Uplands Avenue, Willenhall, Staffs.

As New. Kirdon D.C./1 Gaiety Pannier. Best offer.—SHARPE, The Nook, Huntley, Glos.

Many "OO" Gauge unused items, cheap. Used locomotives, coaches, wagons, trackwork. 6-volt Shenphone. S.A.E.—Box No. 6597, MODEL RAILWAY NEWS Offices.

"M.R.N.," April, 1935, to September, 1939, for sale. Unusual opportunity. Offers to—RIDDLE, 9, Conway Close, Stanmore, Middlesex.

Gauge "O" Locomotives, books. S.A.E.—OATWAY, 14, Cottimore Avenue, Walton-on-Thames, Surrey.

Sale. "O" gauge locomotives. Southern six-coupled tank, electric, Leeds, as new; G.W. four-coupled "Sydney" clockwork, Bassett-Lowke, good condition. Railway periodicals and books.—Box No. 6599, MODEL RAILWAY NEWS Offices.

For Disposal. Gauge "O" Exley L.M.S.R. "Duchess of Montrose." 12-16 volt d.c., coarse scale, centre third rail pick-up. Works overhaul, August, 1952. Guaranteed. Original cost £110, 1944. Price £40.—Box No. 6600, MODEL RAILWAY NEWS Offices.

For Sale. "OO" gauge 16.5 mm. two-rail equipment. Almost new, owner changing to "O" gauge. S.A.E.—16, Poyle Road, Guildford.

Jamieson "County" Kit with wheels, 45s. 0-4-0 3½" gauge tank, drawings, frames, finished wheels, pump castings, 40s., or exchange Trix.—Box No. 6601, MODEL RAILWAY NEWS Offices.

N/S Soldered Track, 12 C., 3' R., 4 St., 14 points, Dublo tank, two scale coaches, eight trucks, £10. Track £6.—5, Ashgrove, Bingley, Yorks.

Bassett-Lowke Gauge "O" brass track and points. Excellent condition. S.A.E. for list.—A. K. FRENCH, 58, Gloucester Road, Hampton, Middlesex.

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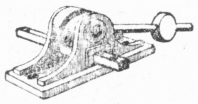

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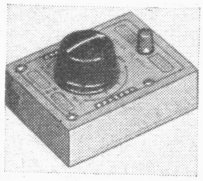

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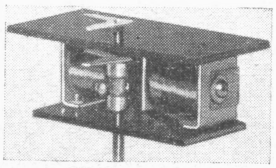

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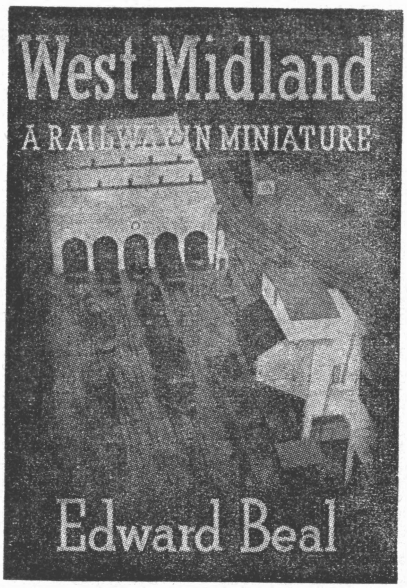

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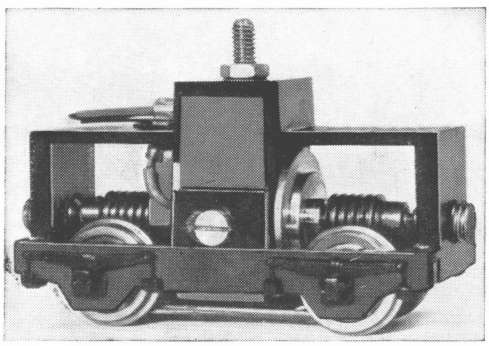

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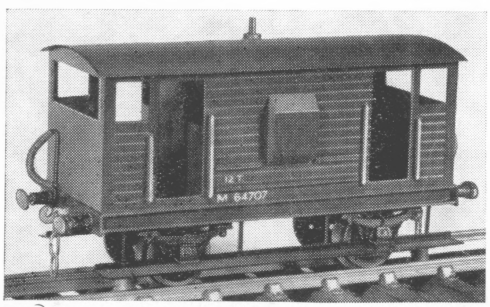

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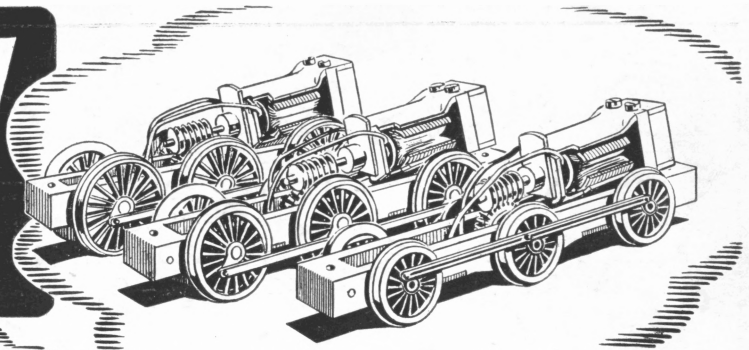

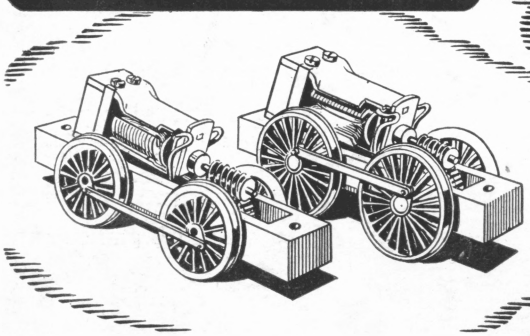

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